FLORIDA WILDLIFE®

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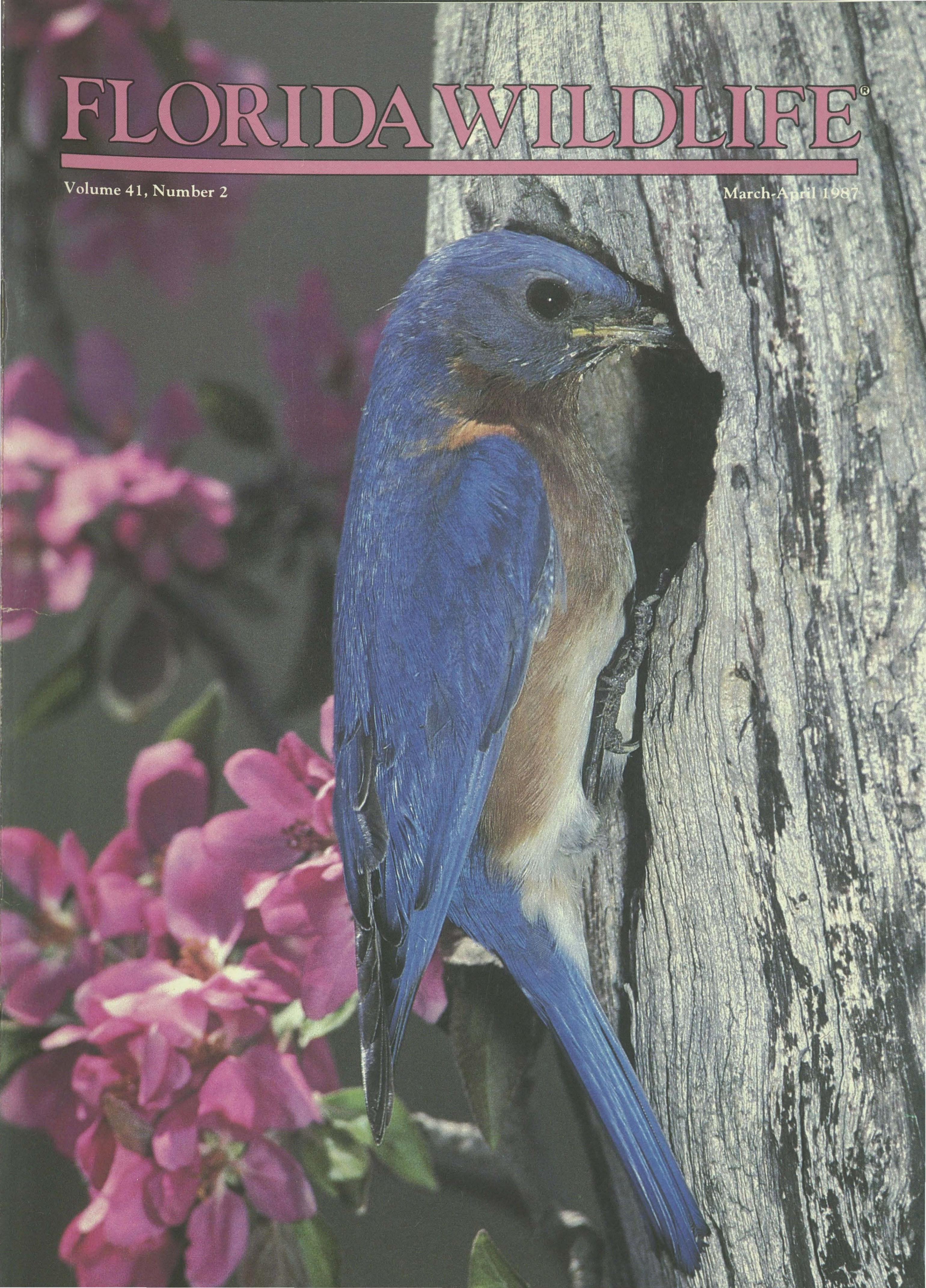
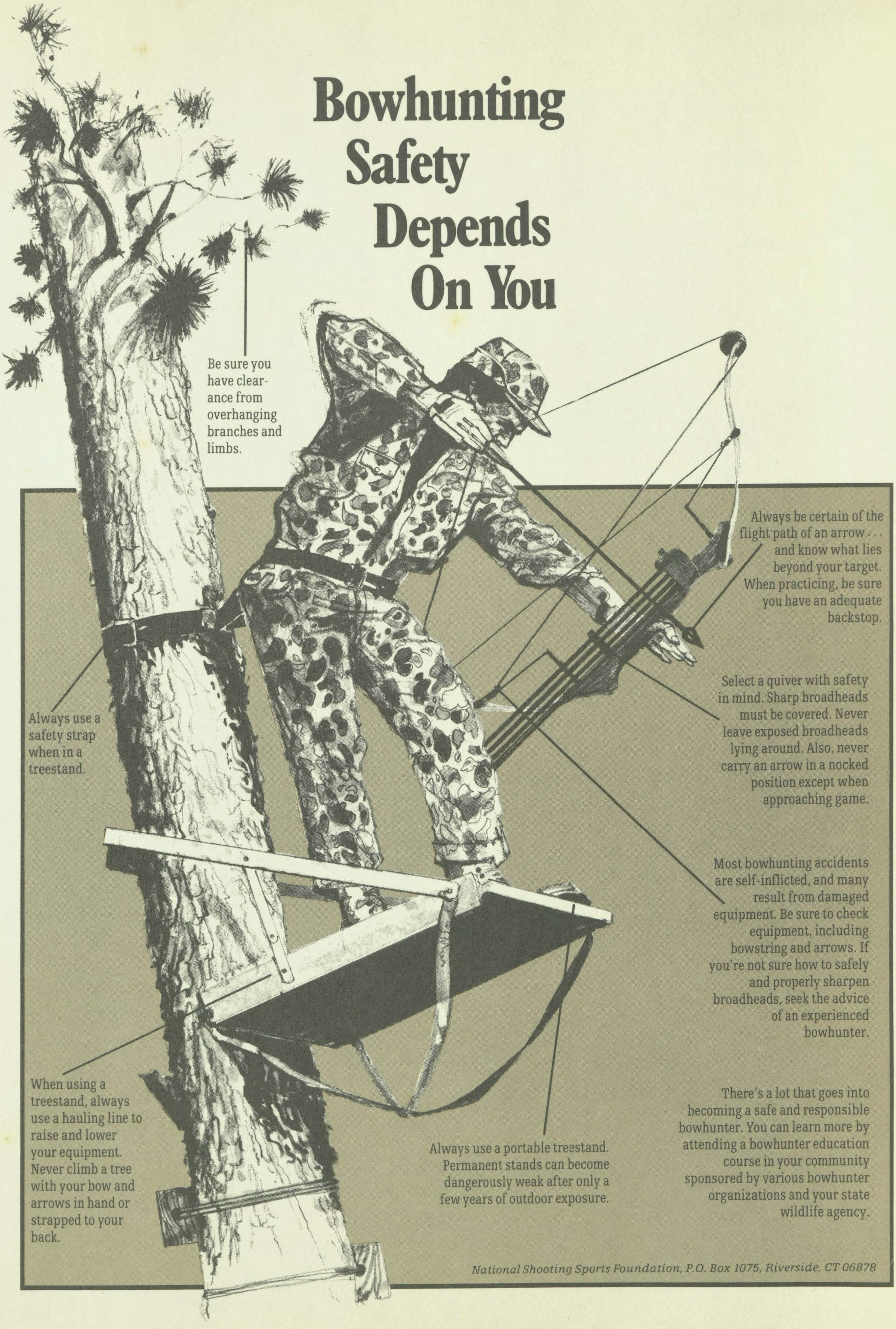


Bowhunting Safety Depends On You



Be sure you have clearance from overhanging branches and limbs.

Always be certain of the flight path of an arrow . . . and know what lies beyond your target. When practicing, be sure you have an adequate backstop.

Select a quiver with safety in mind. Sharp broadheads must be covered. Never leave exposed broadheads lying around. Also, never carry an arrow in a nocked position except when approaching game.

Always use a safety strap when in a treestand.

Most bowhunting accidents are self-inflicted, and many result from damaged equipment. Be sure to check equipment, including bowstring and arrows. If you're not sure how to safely and properly sharpen broadheads, seek the advice of an experienced bowhunter.

When using a treestand, always use a hauling line to raise and lower your equipment. Never climb a tree with your bow and arrows in hand or strapped to your back.

Always use a portable treestand. Permanent stands can become dangerously weak after only a few years of outdoor exposure.

There's a lot that goes into becoming a safe and responsible bowhunter. You can learn more by attending a bowhunter education course in your community sponsored by various bowhunter organizations and your state wildlife agency.

National Shooting Sports Foundation, P.O. Box 1075, Riverside, CT 06878

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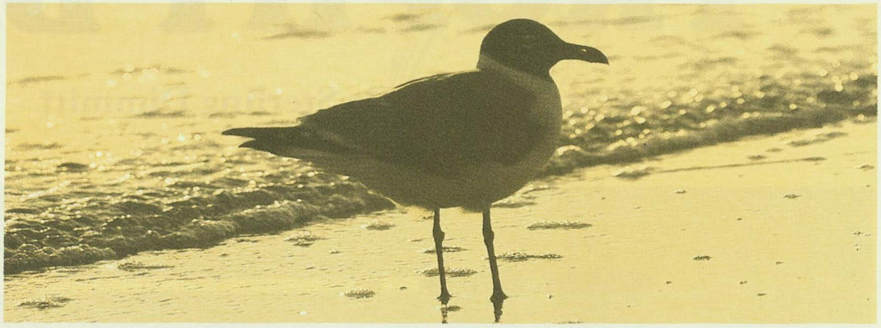

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THE COVERS

The Eastern bluebird photograph on our front cover was taken by Tom Ulrich. The back cover photograph of a red-shouldered hawk is by Brian Toland.

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TOM'S TROPHY BASS

By Sterling Dimmitt

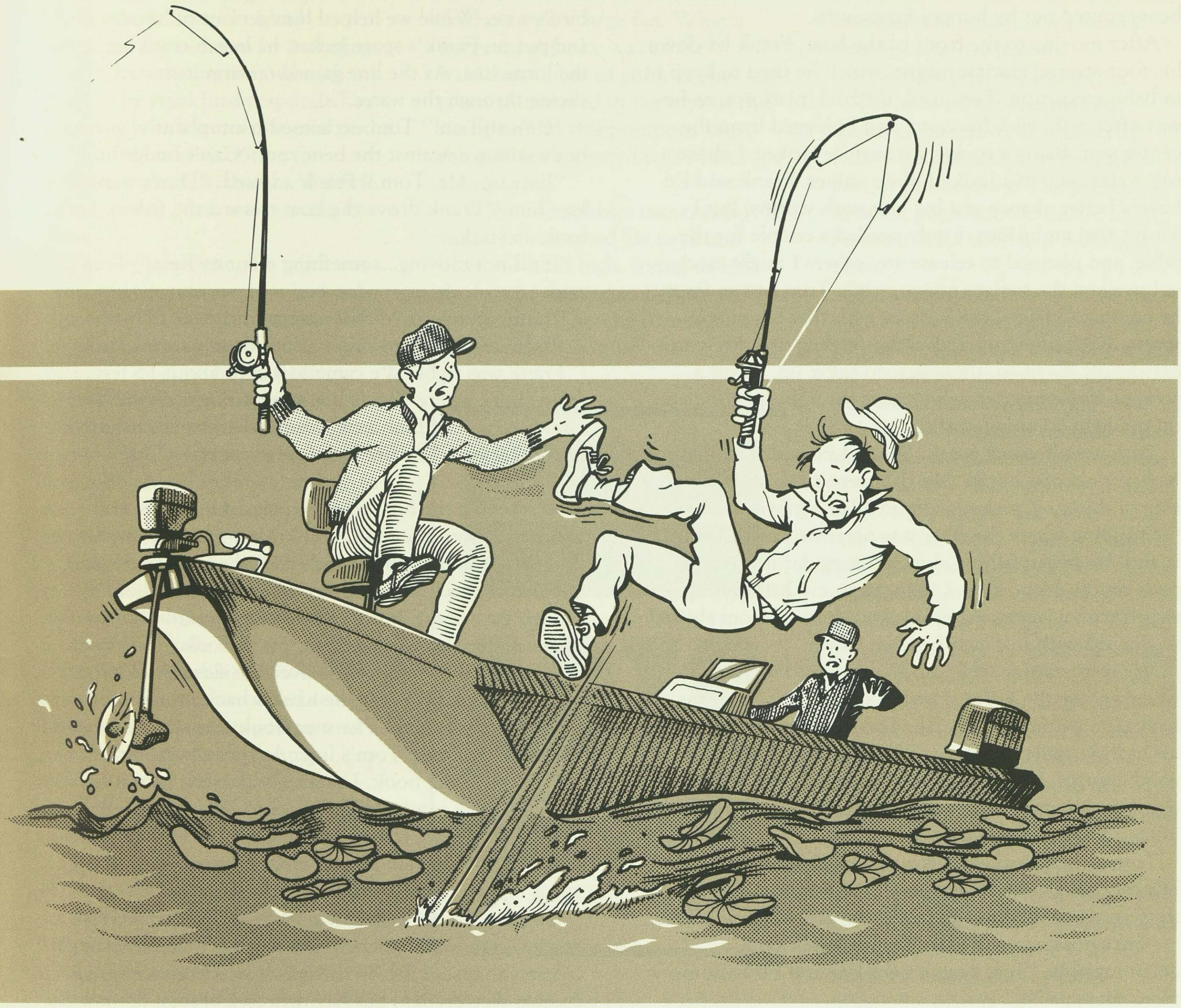
Making the right moves in the world of finance came as natural to Tom as calling plays did to a Heisman Trophy quarterback, but put him in a boat for bass fishing and he became a World Class Klutz. I feel guilty writing about him like this, because he's no longer around to defend himself, yet I just can't resist telling this one story.

Tom did enjoy his bass fishing and, like parading his big money, he wanted a trophy bass hanging on his office wall. In weak moments, he had even threatened to buy one already stuffed, but I shamed him out of it. So, as often as his money-making would let him, he would be in hot pursuit of that wall hanger. Here's the straight story on how he finally got it.

Tom called and asked me to go fishing on the St. Johns River. I was always ready because he was good company—as long as he didn't talk money—and because he went luxury class, which was a real treat for a rusty pick-up truck and rental boat man like me.

When our fishing day came, Henry (Tom's man Friday) picked me up in a new-smelling Caddy about 5 a.m. Tom was at Tillie's Cafe getting coffee and sweet rolls. I found Tom in exceptionally good spirits that morning—guess no one had asked him when he was going to retire lately. That always spoiled his life for about a week, as Tom detested being reminded of his age. He was around 75 at the time, but he disguised it well with hair dye.

As we rode along sipping coffee and munching rolls, Tom talked about his newfangled bait-casting reels. He said they had foolproof star drags plus magnets that would absolutely control backlashes. I remember hoping to myself that there really was some magic about these reels. Tom never could get the hang of thumbing a spool. If it were calculated, I'll give odds that he spent more time working on backlashes than fishing. You would think that practice would have helped—he fished as much as twice a week—but it didn't make the slightest difference. However, what Tom lacked in coordination, he made up for in perseverance. A lesser man would have given up long ago or at least turned to spin fishing or live bait. Not Tom. He knew he needed a



bait-casting outfit to bring in a big one and he considered using live bait taking unfair advantage of the fish.

Our guide, Frank, was paying for the gas as we pulled up beside the dock at Astor. When Frank saw Tom, he asked, "Well, Mr. Tom, you gonna get 'em this time?"

"Don't know, Frank," Tom answered. "Just keep trying 'til I do."

Henry stowed our gear on board Frank's bass boat as we settled into the flashy fishing machine. Things had sure changed since I was a kid. I smiled as I pictured the water-sodden plywood boat, powered by a five-horse kicker, that carried me on my earliest fishing expeditions.

Frank cranked the big six, let it idle for a minute and then we shot forward, planing like a hydrofoil into the damp, chilly darkness. As our bodies buffeted the air, we curled forward, trying to hold warmth. We hurtled through warm spots, where there were dank, fetid river smells. I thought to myself that Tom was paying them more mind than I was.

Dawn had broken about the time we left the dock, but it was dark on the water, shaded by tall cypresses. By the time Frank shut the motor down, a red glow in the east signaled that we would soon have light.

After plugging a lamp into the dash, Frank began rigging Tom's outfits. I watched him thread a quarter-ounce bullet-nosed sinker through 20-pound-test mono and tie the line onto a 4/0 sproat hook. Then he hooked up a big, purple, kinky-tailed plastic worm Texas style. The other rig got identical treatment, except this time the worm was an ugly reddish color—uglier the better, Frank always said.

Bass were hitting all around us, chasing shiners to the surface and nabbing them when they had no place to go. ▷

The water was dark, stained by tannin leached from the cypresses. It was about six feet deep and had a grass bottom. Shiners tried to hide in the grass, but were being routed out by hungry bigmouths.

After moving to the front of the boat, Frank let down his foot-steered electric motor, which he used to keep us in fishing position. Tom took the back platform, as he was often wild with his casts, and I plugged from the center seat. Being a sucker for surface strikes, I chose a top water plug that looked like a shiner. Frank said I'd have a better chance at a big bass with worms, but I wasn't that ambitious. I only needed a couple for the table, and planned to release any others I might catch.

I worked the surface action, while Tom cast as far as he could and fished the bottom with that big purple worm. Excitement over all those feeding fish threw my casting off. Even so, I was first to hook up. It was a scrappy two-pounder, which gave me a pretty good run on my light spinning outfit.

Tom wasn't doing much. While I boated three fish, he had only one bump. My fish were all small to Frank's way of thinking, so he recommended a move.

Stopping where the river was narrowed by a slender island, we began fishing along an irregular line of lily pads on the island side. I changed to my bait-casting gear rigged with a worm. At Frank's suggestion, Tom shifted to the rod with that ugly reddish worm.

We were casting well into the pads and working the worms along the bottom with our rod tips. Tom was having an extraordinary day. The new rigs had improved his casting considerably—no backlashing and pretty good control. He was just talking about how great the rigs were when he stopped halfway through a sentence. "Got a bump! He's taking it!"

Tom struck hard and his rod bent sharply. Then the biggest bass I've ever seen alive wallowed on the surface in front of us, shaking a maw as big as a dragline bucket.

"He's hooked good, Mr. Tom," Frank said encouragingly. "Just keep a tight line and I'll back away from them pads."

Instead of running deeper into the pads, the big fish headed for open water between the island and the opposite bank. It sounded and kept running doggedly up the middle of the river. I thought to myself that it was just a matter of time before that fish would come to net. Tom knew it too, I guess, because he was showing a big toothy smile.

But things changed. All of a sudden that bass reversed course and headed in our direction. Frank shifted the boat sideways, while Tom reeled feverishly trying to keep the line taut. As the big bass came by us, he swerved and plowed directly under the middle of the boat. About the same time, Tom caught up with the slack line and his rod tip jerked downward against the gunnel. Reflexively, he came off the seat and shuffled near the edge of the platform as his rod bent into the water. All at once the fish made a strong lunge, throwing Tom off balance. Tom did a little jig on the platform and fell sprawling into the river, still clutching his rod.

After we retrieved an unhurt, dripping wet Tom and had him back on his perch, we looked at his rig. Somehow, in the excitement of the fall, he had punched the free spool button, but surprisingly, there was no bird's nest. While we helped him get out of his wet shirt and put on Frank's spare jacket, he began cranking up the loose line. As the line gained tension it started slicing through the water.

"He's still on!" Tom exclaimed triumphantly, as his body strained against the bent rod. "Can't budge him!"

"Ease up, Mr. Tom," Frank advised. "Don't want to lose him." Frank drove the boat toward the fish as Tom took up slack.

"Still not moving...something is funny here," Tom said.

"Line's hung up," Frank reported matter of factly.

I'll leave what Tom said to your imagination.

Frank was right. We came to a spot about 15 feet from shore where Tom's line went straight down. You could see a dead limb near the shoreline that projected into the water. The line was fouled on one of its branches.

After tying the boat to a couple of long poles that were stuck into the mud, Frank went to work on the line. He could feel the branch with the paddle; it was about three feet under water. When Frank pulled, the branch gave some, but the line was hung solidly.

Ready for this sort of thing, Frank took a snag hook from his tool box and fed it over the side. Hooking the branch on the first drag, he hauled back on the cord, snapping the branch. The snag hook was still hanging to the piece that held Tom's line. As I watched Frank retrieve the snag hook, I saw his arms jerk forward.

"He's on, I can feel him!" he said. Working with his fingernails, Frank freed the line from the branch. Tom cranked up the slack and connected again with the big fish.

To prolong the excitement of that battle, I'd like to report a renewed fight, but the truth is that Tom simply led an exhausted fish to the net. It had been whipped by that tree branch, but having a tree branch do half the battling for his trophy was no disappointment for Tom. He had his prize in hand and that's what counted. And what a prize it was: the fish weighed 12 pounds, 4 ounces on Frank's scale, an impressive bass even for Florida waters.

Tom called a friend, a newspaper editor, as soon as we got back to the dock. Later, a reporter and photographer showed up at Tom's house. Tom had quickly showered, shaved and was sporting a safari suit with a red ascot as he posed in front of his Caddy, holding that prize mossback. Sunday's local section carried a 5" x 7" full-color picture of that scene, right in the top center of page one. Tom bought a hundred copies and mailed whole page clippings to his out-of-town cronies.

Frank's guiding business boomed from the free advertising, and Tom had his wall hanger. The story in the paper didn't mention Tom's dunking or the tree limb's part in the battle. Tom kept it that way, and I've never told until now.

TURKEY CALLING ARTS

By Aubrey Martin

G*il-obble-obble-obble*! The thunder of a Florida wild gobbler sounded 250 yards within the hammock. I had tantalized the old tom by imitating the hoot of the barred owl with my voice. The regal bird responded by gobbling his claim to that part of the woods. Previous scouting for gobbler signs in Richloam Wildlife Management Area was proving its value.

The sky was clear, the wind was calm and the temperature had only dipped to 50 degrees. It was really an ideal morning for hunting the monarch of game birds. Arriving before daybreak, I had been standing at the edge of a lush, green hammock. The plan was to entice any gobbler within hearing range to sound off before daylight, giving away his exact location.

As the last star faded, it was time to *talk turkey*! Using a mouth diaphragm, I queried the forest with a few sleepy *clucks* and soft morning *yelps* of the turkey hen. *Gil-obble-obble-obble*, came the excited reply! My heart began beating faster and I had to calm down to plot my strategy. After the gobbler made a few more calls, I sent him the "fly down" *cackle* of the hen.

Quickly, I advanced 50 yards closer to the big bird. He was still on the roost, then not more than 200 yards away. The next tactic was to use the "meet me halfway" approach. After enticing the gobbler with another mating *yelp*, I took advantage of the dim morning light to sneak another 100 yards closer. Sitting down in front of a large tree with some undergrowth about it, I got ready.

The gobbler could not resist my next volley of calls. I began cutting (fast putting), using a diaphragm caller. *Puttt, putt, putt, puuutt.* After two or three runs of cutting, I finally sent the old boy an excited *cackle.* He gobbled again from the roost, then flew down. As soon as he hit the ground, he called out a double gobble. This revealed he was ready to meet.

Then, the main event began! The gobbler advanced in full strut, with his wing tips brushing the forest floor. He pulled his head and neck in close to his body, swelled his body feathers and spread his tail feathers into a large fan. What a gorgeous sight he was as the irridescent hues of gold, copper and green shimmered in the rays of the rising sun! In this pompous state, the gobbler appeared to be twice his actual size.

When the gobbler came within 50 yards, he stretched his neck and lifted his head high, trying to spot the hen he seemed to believe was in my vicinity. Then he continued to move closer.

My Remington 1100 was held at ready, with finger on the safety just as the noble bird disappeared behind some palmettoes. Had he seen me? Or was he simply suspicious and ready to escape? Neither was the case. When he came through the palmettoes, I could only see the ungainly waddle of his head. Moments later, however, he stepped into the open only 30 yards away. When he stretched his neck to take a good look in my direction, I took aim. At the report of the 12-gauge magnum, another regal prize was harvested and this hunter was exuberant!

Even after 30 years on gobbler trails, it is still a thrilling experience to hear the sensational challenge of gobbler thunder, to glimpse that majestic beauty in remote swamps and, finally, to lure one within range of a gun or camera! Because of wise management practices for several decades, this has become increasingly possible in Florida.

The wild turkey has made a tremendous return to prosperity from near extinction in the early part of this century. The present national population estimate is between 2,500,000 and 3,000,000 birds.

Turkey populations in most states were at an all-time low by the late 1940s. At that time, Lykes Brothers Inc. of south Florida cooperated with the Commission by allowing turkeys to be trapped on their lands and relocated to various other areas of the state. The program continued until 1970, and by that time 8,000 turkeys had been relocated. Now, in spite of tremendous human population growth and loss of suitable turkey habitat to development, the estimated Florida turkey population is 80,000 birds.

The increase of the wild turkey population over the last two decades has caused a sharp increase in hunter interest. More tyros are taking up the sport. These beginners need to make a study of the game and the tactics required to be successful in this exciting sport. The real challenge of turkey hunting is to entice the gobbler to come within range, by using a turkey caller to imitate the mating *yelp* of the hen.

Locating turkeys is the first consideration. It is not enough to know turkeys are in a large general area. The successful hunter will scout the woods prior to the actual hunt in order to pinpoint the game. Tracks may be found on woods roads and trails. Special attention should be given around swamps, and sandy and muddy areas. Mature gobbler's tracks will be more than four inches in length and width. During the early part of the spring mating season, before hens begin setting eggs, wherever you see hen tracks there is a good chance toms are not far away.

During the actual hunt, it is the loud *gobble* that locates the tom. Given the right conditions, this call ▷

of the male may be heard up to a half mile away.

Be in the hunting area before daylight. Whenever possible, it is wise to listen for gobbles the day before the hunt. Once you hear a gobbler on the roost, he most often will be within hearing distance of the same spot the following morning.

When you hear a gobbler you have some critical decisions to make in setting up to call him into range. It has been my experience that the closer I get to a gobbler, the higher my success. Some hunters feel that 150 yards, or even 200 yards, is close enough, but if I have the advantage of dim light and good cover, I set up as close as 75 yards from a roosting gobbler, and am careful not to spook it.

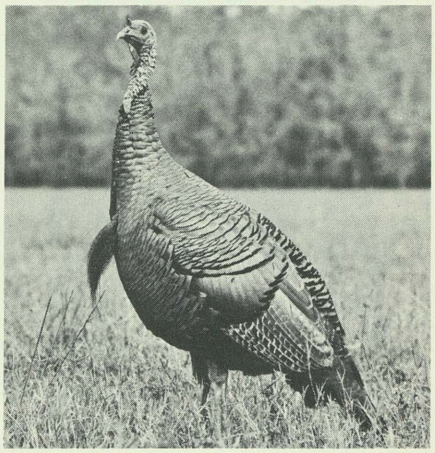
There are other considerations in setting up for success. First, you should locate on the same level or above the game. It is easier for a gobbler to walk up an incline than to walk down. When a hen is below a gobbler, he expects her to come up to him. Also, it is never wise to try to call a gobbler across a creek or brushy hollow. There should be no obstacle between you and the bird.

The idea is to make it as simple as possible for the gobbler to come directly to your calling position. It is good to sit in front of a tree wider than your body, facing the quarry. It is better to choose a spot where the woods are open enough to spot a gobbler at least 40 yards away and always be sure you have room to swing your gun 180 degrees. Quite often, sharp old toms like to circle you.

You can be sure turkeys will see any quick movements. If you have to move while sitting on a stand, do it slowly and gradually. Quick movement will end your hunt prematurely—the gobbler will be gone!

Once you set up for working a gobbler, then your calling technique and strategy become all important. While the bird is on the roost, it is usually best to call sparingly. Continuous calling may keep the gobbler on the roost for an hour or more. If you are within 150 yards, a few *clucks* often causes the tom to react as though a hen is on the ground near him. In such case, he will usually fly down promptly. Even if you do not see or hear him when he flies down, when he gobbles on the ground you will know it. The gobble will sound muffled.

If he is approximately 100 yards away, respond with *clucks*. Sometimes that is all that is needed. If he does not come closer within five minutes, send him a lively mating *yelp* of four to six notes. Later, a little cutting can be used. If this does not bring him in, you may have to pull a few tricks of your own.


GFC Photograph

Sometimes an old gobbler which has been chased a while will become call shy. Other hunters have called him up and spooked him or shot at him. He will come to 100 or 150 yards from your position, then "hang up." He will seem determined not to come any closer.

I recall an experience with such a gobbler in Gulf Hammock Wildlife Management Area, on the West Coast of Florida near the town of Gulf Hammock. I decided to wait him out and see what would happen. I used only *yelps* on a box caller at 15-minute intervals. The turkey gobbled, double gobbled then triple gobbled. One time he pealed out five consecutive gobbles, but he had not come any closer after gobbling 149 times! After I had worked him an hour and a half, curiosity got to him. About 15 minutes after my last call, he gobbled 30 yards from my stand. I took him with an easy shot. Persistence paid off!

There are several tricks I have used successfully on gobblers that "hung up," to entice them to come in. One occasion happened in Tomoka Wildlife Management Area, near DeLand. I roosted the gobbler the previous evening, and after gobbling a few times on the roost, the morning of the hunt, he flew down promptly in response to my calling. He came within 125 yards of my position, then began the routine of pacing back and forth, gobbling at short intervals. He was suspicious. The gobbler would answer my calling, but he would not advance. Then, I decided to try a trick on him. Using a tube type caller, I sent him a mating *yelp*, then held the caller in position to call again. The turkey replied, and as he began to gobble, I *yelped* again over his gobble. That fooled the big bird. He double-gobbled and began walking straight to my stand. That gobbler was taken at just 20 yards. Another strategy is to use a special caller to imitate a gobble. This works well with old "boss" gobblers.

The "boss" cannot stand another gobbler infringing upon his territory. If he perceives another tom coming to a hen that should be his, he will come running, prepared to fight. In lieu of imitating a gobble, coarse gobbler clucks will often work as well.

Finally, if all else fails, mobile calling may be the solution. This can only be done when you have good cover and know the exact location of the gobbler. Immediately after the bird gobbles is a good time to move. Often, moving away from the bird, calling as you go, is a good persuader. He may perceive his prospective hen is leaving the scene and he'll come running.

You may also flank the gobbler by moving to either side of his position. You may not necessarily get closer, but the fact you have changed your position may deceive the turkey into acting as if a hen has come looking for him. A few clucks may be all that is needed to bring your quarry into range.

Turkey Callers

Make Your Own

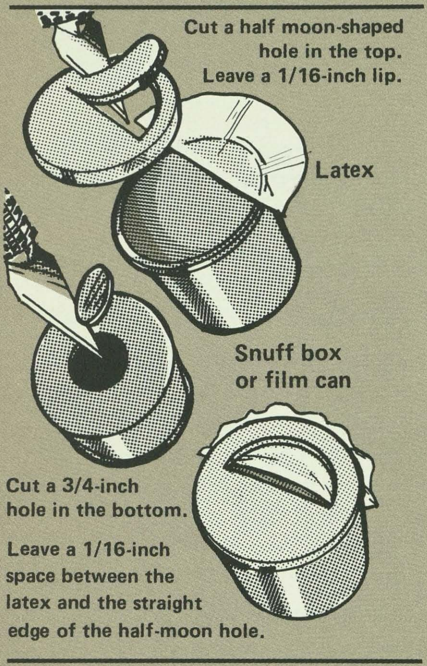
Choosing a turkey caller can be an exercise in itself. The large variety of callers on the market and which can be hand-made can be confusing. However, it may be encouraging for the newcomer to realize there are only three basic principles involved. The diaphragm and tube callers are mouth blown. The wing bone type requires mouth and suction. The friction callers are hand-held and usually used by drawing some kind of striker across a sounding device. Callers are mostly manufactured of wood, plastic, slate and aluminum. Which caller is best for you? It is the one with which you can best perform.

Many hunters take pride in being able to lure gobblers into gun range using callers they have made themselves. It is believed the American Indians used two sections of the turkey wing bone, fitted together, to make a caller.

Friction callers are easiest to learn to use. Beginners might consider types such as the "Easy-Yelper" or the "Chatterbox." These are spring loaded, push pin box callers which are very easy to use. This type caller is held in the palm of one hand and operated with one finger. It will produce the *clucks, yelps, purrs* and *cackles* of the hen.

Most experienced hunters carry two or more callers to use on their hunts. When a gobbler does not respond to one type caller, he may like the sound of another. Also, by using multiple callers in sequence, your quarry may act as though several hens are enticing him. This seems to reassure a gobbler and bring him to you.

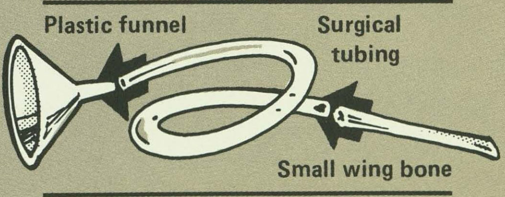
An old-time, turkey call is home-made from a small snuff box, with a diaphragm of thin balloon or dental dam latex. Certain latex gloves will work as well. To make it, cut a hole the shape of a half moon in the snuff box lid. The straight line cut should be across the center. Do not extend the cut to the edge of the lid, but only to 1/16-inch from the edge. Make the semicircular cut 1/16-inch along the edge of the lid to meet the straight cut and form the semicircular hole. The other half of the lid remains intact. Next, cut a piece of latex about two inches square. Place it loosely over the top of the snuff box with the lid off, then close the lid over the latex, leaving an open slit about ⅛-inch wide between the straight line of the hole and the straight line of the latex. This may require several tries as the tension of the latex is critical. A tightly stretched latex will produce higher pitched sounds and less tension on the diaphragm will give lower pitched sounds. Lastly, use an ice pick or nail to punch several holes in the bottom of the can, or cut a 3/4-inch hole.


Cut a half moon-shaped hole in the top. Leave a 1/16-inch lip.
Latex
Snuff box or film can
Cut a 3/4-inch hole in the bottom.
Leave a 1/16-inch space between the latex and the straight edge of the half-moon hole.

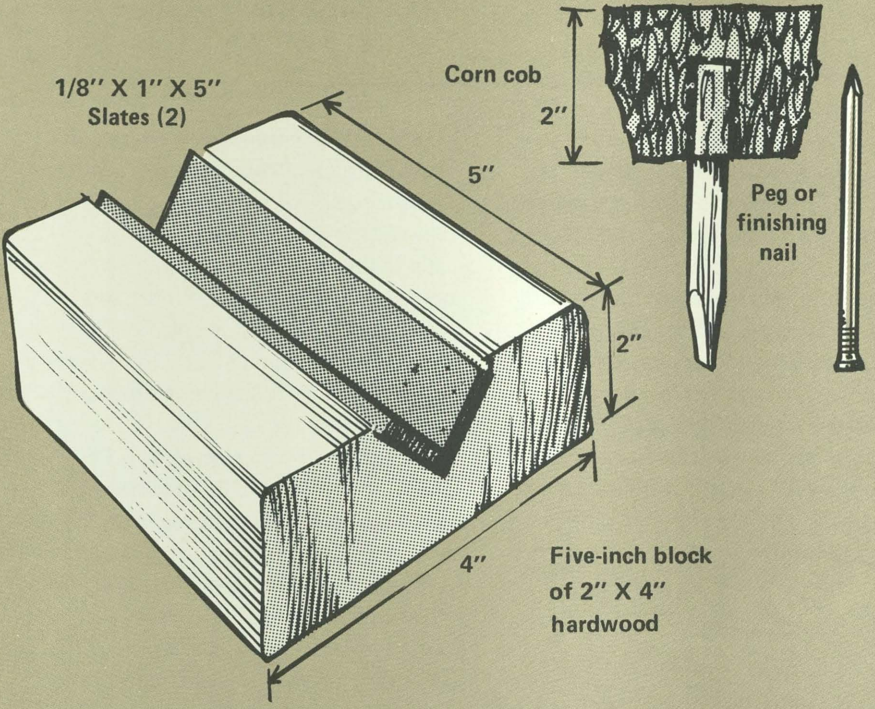
To operate, hold the caller to your lips with the circular portion of the diaphragm upward. Your bottom lip should approximately cover the slit opening between the latex diaphragm and bottom half of the lid. The upper lip should wrap around the top portion of the lid, completely sealing the top of the can. As you blow into the caller, all air should pass through the can and out the holes at the bottom. Pressure applied with the lips helps control the pitch and volume of calls made. Practice different lip positions; for instance, higher or lower on the lid and diaphragm. In this manner you can learn to make soft or loud calls at many different pitches.

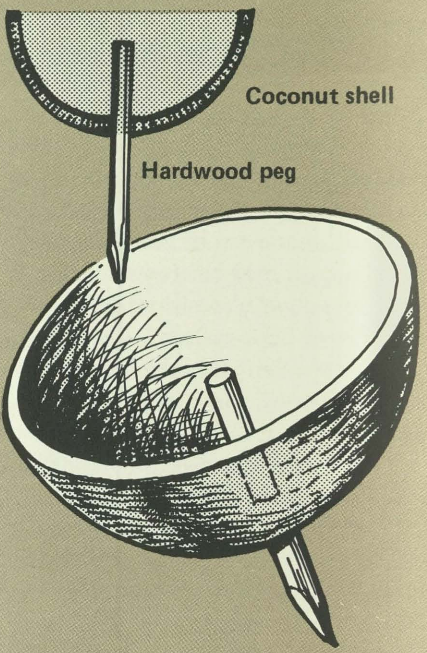
Plastic pill bottles or 35mm film containers may also be used to make this type caller. The lid must be nonlocking and of flat soft plastic. It is difficult to cut the bottom hole without breaking hard plastic, but if you heat an ice pick red hot, it will be simple to punch several small holes.

There are three types of wing bone turkey callers you can make. Use either or both of the bones found in the middle joint of the wing of a hen or gobbler. Each end of the bones should be cut square and the tips smoothed with sandpaper. Remove the marrow by thrusting a thin wire through the hollow bones, then boil them three minutes in water, to which a little detergent has been added, to remove any trace of grease. One variation requires a 12-inch length of surgical-type rubber tubing (available at some drugstores) and a small plastic funnel. This model is especially good for long distance calling.



To operate either wing bone caller, place the small end to your lips, a little to one side of your mouth. Do not insert the caller between the teeth. Holding your lips tightly around the end of the wing bone, draw air inward in sharp bursts. Hold tension in your lips and cup your hands around the other end to modify and improve the sound. ▷





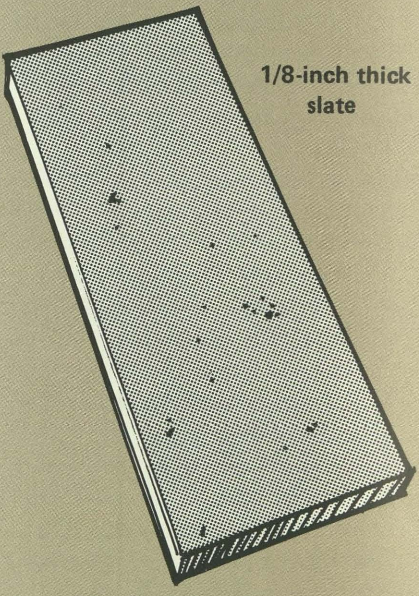
The corncob and slate caller has been used to harvest thousands of gobblers. The dimensions shown here are approximate. A five-inch block of 2" x 4" hardwood forms the base. Cut a "V" groove into one side of the block. The angle formed should be 90 degrees at the bottom of the "V." Glue two thin pieces of ⅛-inch thick slate into the groove. Cut a 2-inch length of dried corncob, drill a hole one-inch deep in one end, then insert a 3-inch length of hardwood dowel into the small end of the cob. Use glue if necessary for a firm fit.

To use, hold the slate block in your palm, and with the other hand grasp the cob between your first finger and thumb. Draw the peg along the slate at the base of the V-groove. Short, quick strokes will imitate a turkey's *cluck*. Longer strokes make the *yelps*. Fine sandpaper or emery cloth may be used once in a while on the slate to improve its sound.

The coconut shell turkey caller is one of the easiest to make and is very effective in convincing the wariest of gobblers. Use a hacksaw to cut off one end of a small coconut to form a dish shape measuring approximately 3-½ inches in diameter and about 1-½ inches deep. Clean the inside of the shell of all debris and fiber. Scrape the outside to remove all loose fiber and husk, then use sandpaper to smooth both sides of the shell. The shell will serve as an amplifier.

Next drill a ¼-inch hole in the center of the shell and insert a ¼-inch by 3-inch hardwood peg into the hole, leaving about 2 inches of the peg protruding. The end of the peg should be beveled and squared to resemble the tip of a screwdriver.

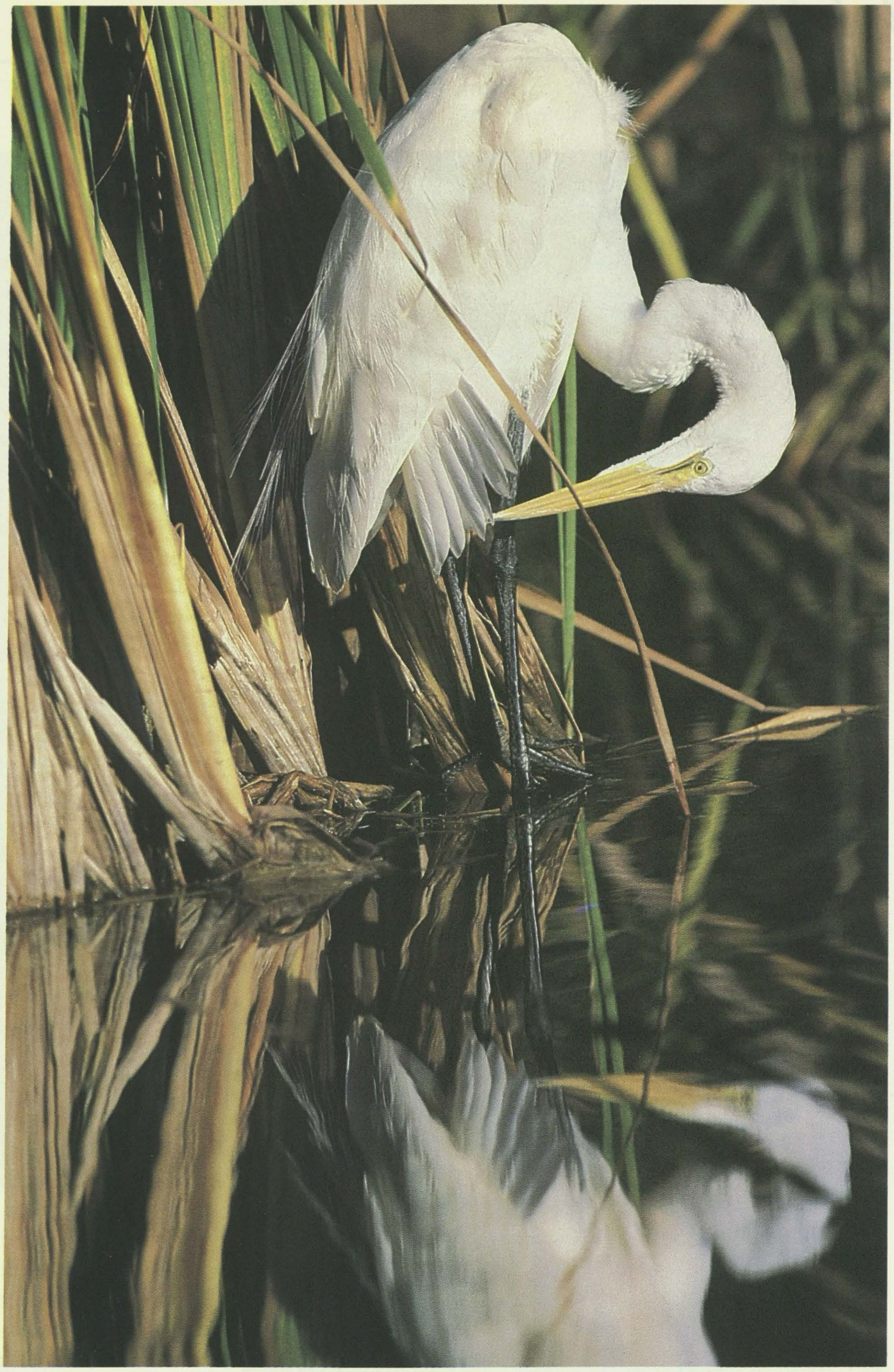
To operate, hold the shell with the dished out portion against the palm of one hand, and a small, round, oval or rectangular piece of ⅛-inch thick slate in the palm of the other hand. Draw the tip of the peg across the face of the slate to produce the desired sound. Pressure should be applied as you work the peg on the slate. Quick, single jerks while applying pressure will produce *clucks*. Longer strokes produce *yelps*.



Circular motions with the peg against the slate will give variations of the yelp.

Slate may be obtained from many craft and hobby shops, and where art supplies are sold. A hacksaw can be used to cut it. For best results in calling, occasionally rub both the slate and tip of the peg with fine sandpaper or emery cloth.

—Aubrey Martin

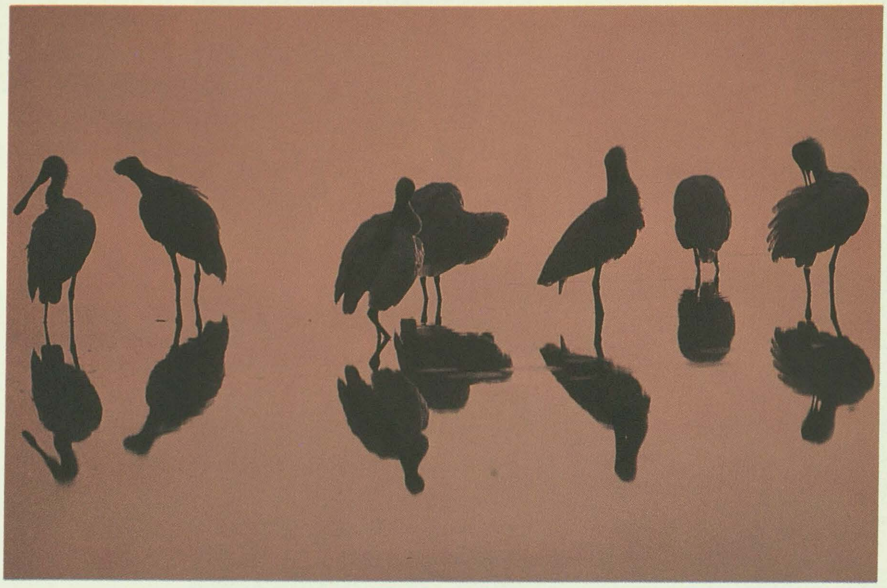


Great egret

Lynn M. Stone

Natural History Photographer

Lynn M. Stone



Roseate spoonbills

Panhandle lily (*Lilium iridollae*)

Lynn M. Stone's natural history photographs and feature articles have been outstanding contributions to FLORIDA WILDLIFE for more than a decade. His first publication with us was a close-up photograph of a great horned owl, which was used as the front cover of the October 1975 issue. At that time, covers were printed in full color, but there was no color inside the magazine.

Stone currently resides in Illinois, about 50 miles from Chicago, where he is a junior high school English teacher. However, he lived in Florida for two years, and for the past 15 years, has returned as often as possible to take photographs of wildlife here.

"Florida is especially fortunate to have so much land in the public domain," he says, also noting that he takes many of his photographs in the state's parks and refuges.

"Ding Darling Refuge (on Sanibel Island), Everglades National Park, DeSoto County Park and Myakka River State Park are some of my favorite areas to visit," he says.

"Although I have noticed that much of the public land in Florida is more crowded with people today than it was 15 years ago, the areas I visit are still in good shape."

He works as an English teacher, but natural science has always been one of his foremost interests. I consider myself a naturalist," he says, "and I like to take photographs of all the various species."

Like many other nature lovers, Stone began studying the natural world as a child. It was during his teen-age years that he become interested in photography, and began using his first 35mm camera—an old rangefinder—while on field trips. During his early years,

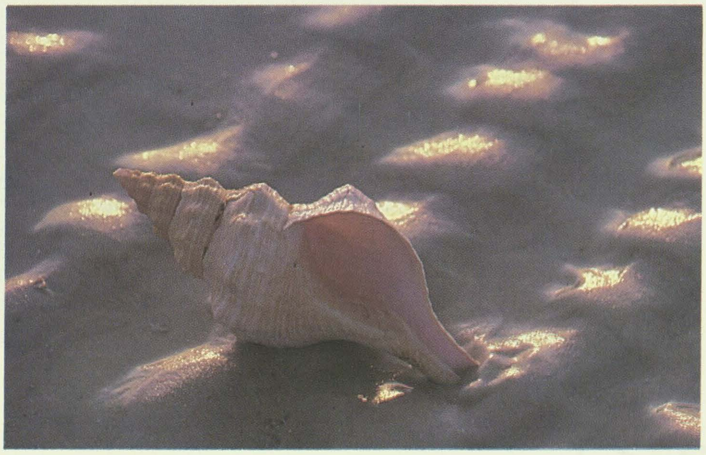
White-tailed deer in Coreopsis

he also had an interest in drawing

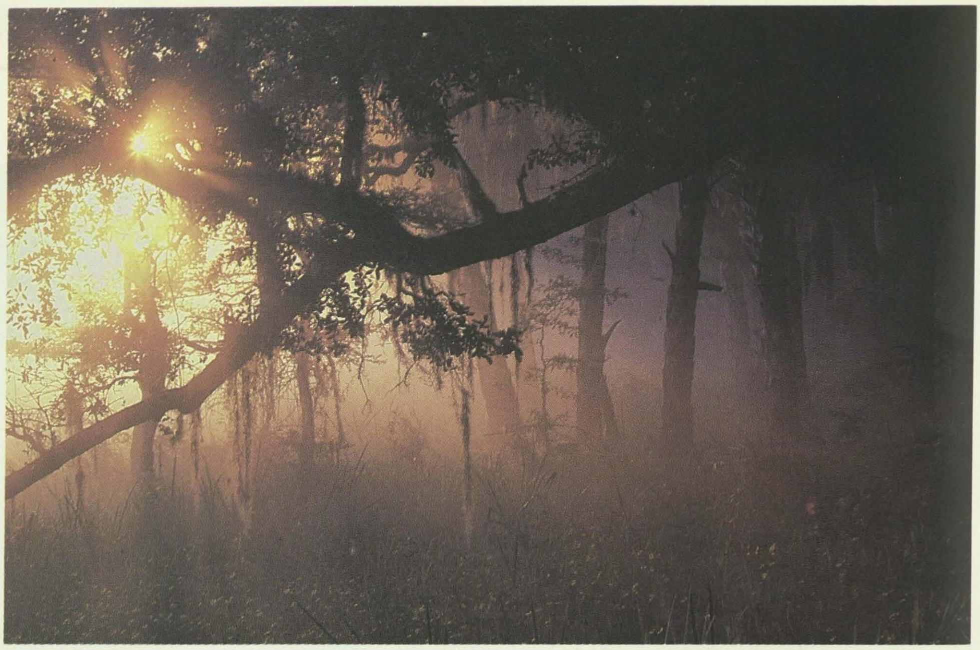
Stone has just finished a manuscript for the Children's Press (Chicago) "*America the Beautiful*" series, which is scheduled to be published in the fall. The book, entitled *Florida*, will show some of his best photographs from the Sunshine State.

For beginning nature photographers, he advises, "Invest in good equipment and use a tripod if you want the best results."

—John Waters Jr.



Horse conch



Myakka River State Park

Laughing gull

Lynn M. Stone

Red-tailed hawk

READ THE WEEDS FOR BIG BASS

Text and Photographs

By Larry Larsen

Florida's shallow-water vegetation holds abundant fish forage, but fishing it poses a few problems to many anglers. To some, fishing snag-infested vegetated waters is as aggravating as trying to sleep outdoors with a swarm of mosquitos buzzing around your ears. Many anglers are afraid to cast into the middle of the stuff and feel they would lose any sizable bass they might hook. But for those who learn how to fish effectively in hydrilla, water hyacinths and coontail moss, rewards can be great.

Bass frequently seek forage fish and other food organisms in heavy aquatic growth, and knowing how to fish these areas while preventing hang-ups is vital. Shallow patches of lily pads and other plants generally hold bass, at least for a short time, each day. When feeding stops, most bass migrate back to deeper structure. Plants in deeper waters may, however, provide bass a sanctuary all day long under the right circumstances.

During spring, I've found fish in shallow vegetation beds in many of the lakes I've fished. Spawning activity seems to be the ultimate purpose for bass being there at that time of year, but once bedding is finished, they can still be found in the shallows for some time, depending on food availability and water quality.

Vegetation in clear, deep-water lakes may not hold fish for long, but in a tannin-stained lake, it may host post-spawners for three to six weeks after spawning is complete. A fairly deep reservoir will usually lose the shallow-vegetation bass shortly after spawning.

Vegetation Thickness

The length of stay for post-spawning, shallow-dwelling bass depends on the aquatic plant density in addition to available forage and water quality. The more vegetated the water, the better its chance of holding a good population of food and bass. Also, the shallower a lake, the more apt bass will be to take up residence in the thickest bed of lily pads or bulrushes available.

Most of the natural vegetated lakes in the Deep South have shallow-water inhabitants for four or five weeks after the spawn. In many of these lakes, bass will move from shallow two-foot-deep beds to heavy vegetation in about three feet of water before going on a post-spawn feeding binge for a couple of weeks. Then they'll move to the edges of the heavy plant beds (in four to five feet of water) and remain there in ambush position for a few weeks before moving to deeper structure.

Lakes full of deep-water structure and having very little shoreline vegetation will have the usual feeding migration, but seldom will many schools of bass be found in the shallows for more than a few hours each day.

Weather Influences

In most Southern states aquatic vegetation grows most of the year. Mild winters increase the possibility of year-round fishing in vegetation. In some areas, however, the best time to fish dense vegetation is in the spring or, at the latest, early summer. After that, the vegetation "blanket" is just too thick to penetrate with a lure.

"Reading the water" in the summer or winter may involve more effort than many anglers wish to expend, but successful anglers need to know the various kinds of aquatic vegetation and the important differences between them. A typical Florida lake might contain lily pads, reeds, bulrushes, hyacinths, hydrilla, lettuce, cabomba, milfoil and pennywort. Knowing the characteristics of each can clue the thinking angler to the hot spots.

Lily Pads

The really big bass seem to love the canopy cover that lily pads provide. There are several kinds of pads, or bonnets, with which anglers should be concerned. The small ▷

The more vegetated the water, the better its chances of holding a good population of food and bass.

The most common lily pads found in Florida are probably the tall, densely growing, yellow-flowered spatterdocks, but, their tough, leathery leaves are notorious for hang-ups

"dollar bonnet" is a very shallow-water pad of little consequence to bass chasers, but the spatterdock (yellow pond lily) and lotus (fragrant water lily) should both be of interest. A basic knowledge of these may enable you to be more successful.

The most common lily pads are probably the tall, densely growing yellow-flowered spatterdocks, but their tough, leathery leaves are notorious for hang-ups. They grow in lakes, rivers and canals throughout Florida and prefer water having high acidity. Spatterdocks protrude above the water more than the lotus and, in doing so, attract more airborne bugs to their stems. The insects, in turn, attract small insect-eating forage fish and ultimately bass.

Lotus beds also harbor multitudes of bugs in their overlapping leaves, which attract shellcrackers and other bream. The lotus has a white, multipetaled blossom and a rounded leaf that normally floats on the water surface. Insects travel along the tops of the pads and can literally be sucked through the leaf by sharp-eyed bream. Look for small pin holes in lotus pads to determine if bream may be present. If bream are numerous in these beds, then bass will be near. New spring shoots seem to attract freshly hatched bugs.

Lotus beds are easier to fish than the others because lotus leaves do not have the cantankerous splits that other pads have.

Hyacinths

The exotic water hyacinth has broad, shiny, dark-green leaves and bears attractive clusters of bluish-white flowers. A single plant is capable of producing thousands of additional plants. Its shallow submerged root structure allows the floating hyacinth to blow into and clog almost any shallow area, and even deeper water which has trees or other structure to help anchor it. Currents and wind may keep some waters clear of hyacinths, but calm water areas may hold hyacinths for years.

Creek edges, flooded timber, deep-based lily pads and brush just under the surface can help anchor and establish hyacinths. Fish will hold under hyacinths much of the year, depending upon the food availability and water temperature. A hyacinth blanket will generally be loaded with grass shrimp, crayfish and small minnows which attract bass.

The best areas to search for bass in hyacinths are usually over deeper water—if there is something there to hold them. Any "structure on structure" tends to be an excellent fish attractor, so hyacinths contained in an area of flooded trees, heavy grass beds, lily pad fields or fallen logs are usually excellent areas to fish.

A few years ago, I was working spinner baits in a small 50-acre lake on a windy day, when I noticed some blackbirds clinging to the reeds on the windward shore. Hyacinths had blown in and it was hard to hold the boat out, but I made a cast to the edge of the hyacinths.

There was an immediate strike, and when I set the hook, I couldn't budge it. An eight-pounder took out line as it started to swim under the floating plants, but I worked it free and had a great fight until I could put the landing net to use. I've caught several bass larger than the eight pounder, but I can't remember a better tussle. That largemouth jumped five times, clearing the water, an unusual feat for a large bass.

Pennywort

Pennywort is an aquatic plant which can be rooted or free floating in mats. It has longer roots than the hyacinth and the roots are much more intertwined. Pennywort is much more difficult for wind or current to move around, and it tends to move as a single mass. Once it has started to propagate in an area and becomes established, it seldom relocates.

Pennywort is often found above good structure or dropoffs. It often becomes established in canals, streams, rivers and other deep-water areas. An ideal summertime bass fishing site is up next to pennywort covering an old creek channel.

Bulrushes and Reeds

Large bass are often found among reed beds and bulrushes (buggy whips) which are in or near deep water, places where shade can be found. Most consistently successful lunker bass anglers fish the cattails, bulrushes and heavy reeds that comprise aquatic jungles (and bass haunts) everywhere. Many experts prefer fishing among these tall emergent plants rather than within submerged grass, hydrilla or coontail because a lure can be worked more naturally through that cover.

Many lunker chasers prefer fishing around bulrushes and cattails ▷

Large bass are often found among beds of reeds and bulrushes which are in or near deep water.

Largemouth bass tend to hang around vegetation at least part of the day because of the availablity of food, or shade when the weather is sunny.

"The bass shot to the surface right in the middle of the 'rushes, and we both knew then that the elusive bluegill-chaser was hooked!"

in five to seven feet of water. They find fish on points some days and in pockets other days. They don't waste time in one place if it's not producing.

I was fishing around heavy bulrush cover on Lake Cypress in central Florida one sunny afternoon, when all of a sudden, a large bluegill shot out from the cover to the surface, leaving a huge wake just behind it. The action, not 30 feet away, continued for several seconds as the chase ran about 30 feet.

My partner and I whipped that area to a froth with our lures, but to no avail. We worked for more than 15 minutes trying to hook that fish, which evidently was a large bass. We left, but after 30 minutes returned to the spot only to come up with nothing again.

My friend was not about to give up, though. After a short run across the lake, and 30 more minutes of fruitless casting there, we cranked up and returned for one last shot at the fish in the bulrushes. He cut the outboard engine and slowly motored us in with his electric trolling motor. His first cast fell perfectly into the bulrush pocket in which the large wake had first appeared. He moved the lure once, felt a pick-up and came back hard on the rod to set the hook.

The bass shot to the surface, right in the middle of the rushes, and we both knew then that the elusive bluegill-chaser was hooked! My partner skillfully worked the eight-pounder from the dense cover and brought it to the boat, where I carefully netted it.

Hydrilla

Thousands of acres of hydrilla freely grow in lakes throughout the United States and it is extremely hard to control. Hydrilla spreads by fragmentation, and small fragments on a boat trailer can be transplanted from one lake to another. It has been known to spread from state to state this way. The fragments can then grow into large plants and thus infiltrate another lake.

Once hydrilla gets a foothold in a lake, it is often hard to stop. Wind, waves and boaters cut and separate the soft, upper shoots of the plant, making firm establishment in most temperate waters easy.

Although coves can easily become choked with mats of hydrilla, fishing for bass and all other species normally improves where it grows. The plant may be a menance to angling during spawning periods if the shallows become clogged with it but good spawns normally occur despite the problems. The volume of forage can be tremendous in hydrilla waters and the fish population often increases.

The water surface can also be read even though hydrilla does not emerge from it. Wave action can tip off the observant angler to bottom conditions and help him determine whether there is action below.

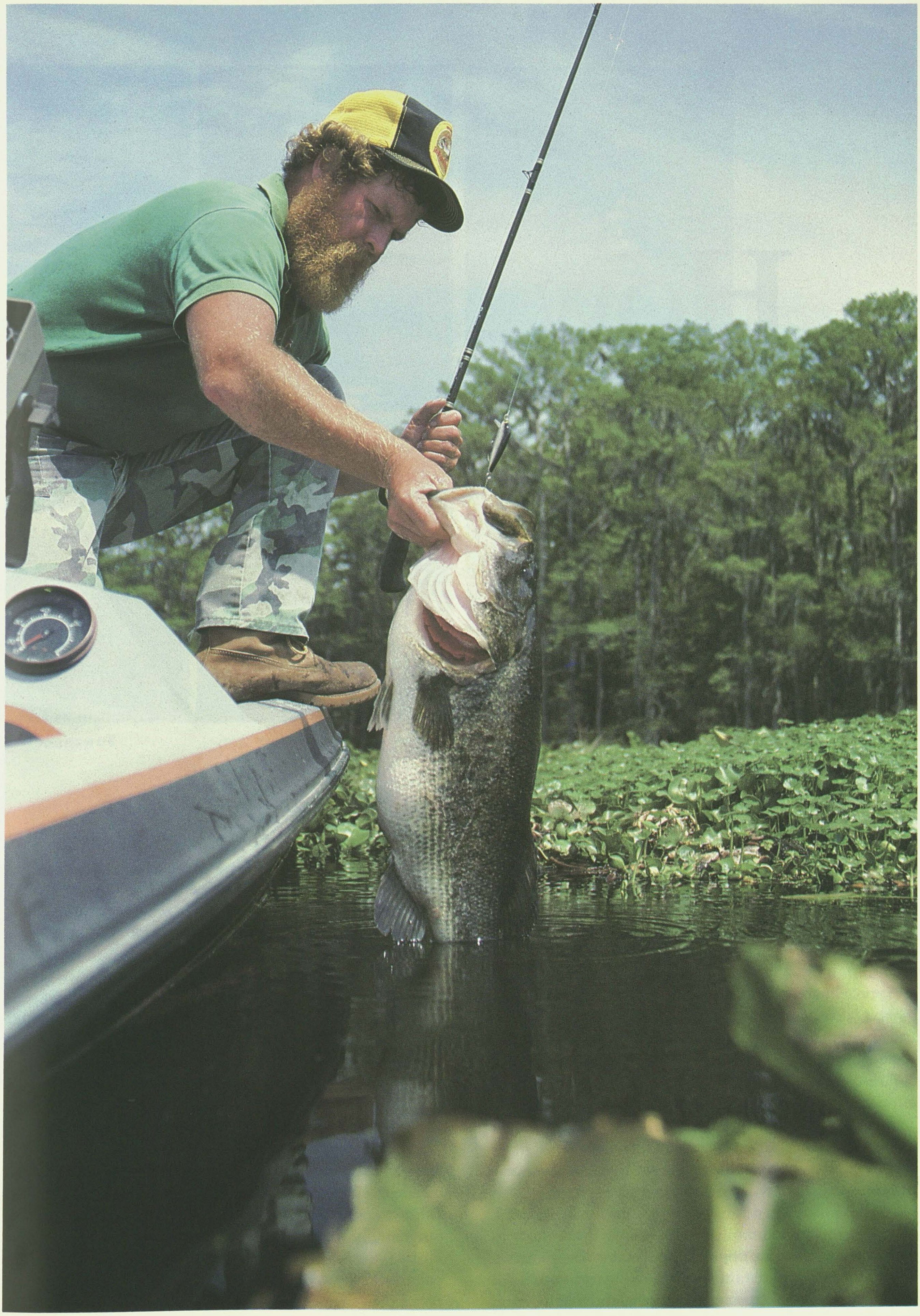
Bird Activity

One thing to be aware of is bird activity. If birds are feeding and walking around on floating plants, then there must also be small bugs, worms, and other foods on the plants. Older plants tend to harbor more insects. Birds can help you find some of the better hyacinth jams where large bass may be lurking.

Another observation you may make is that lunkers are sometimes eager for a feathered meal. Bass have been known to attack birds when possible, and swirls and splashes beneath birds that are tip-toeing over the hyacinths are not unusual. Bass usually miss the birds, but if you're quick, you can often cast in close to the action and maybe get a strike.

Egrets and herons working a bank near a hyacinth jam often indicate minnows might be beneath the plants, where bass can get at them. Coots and ibises are also frequent feeders in hyacinth jams.

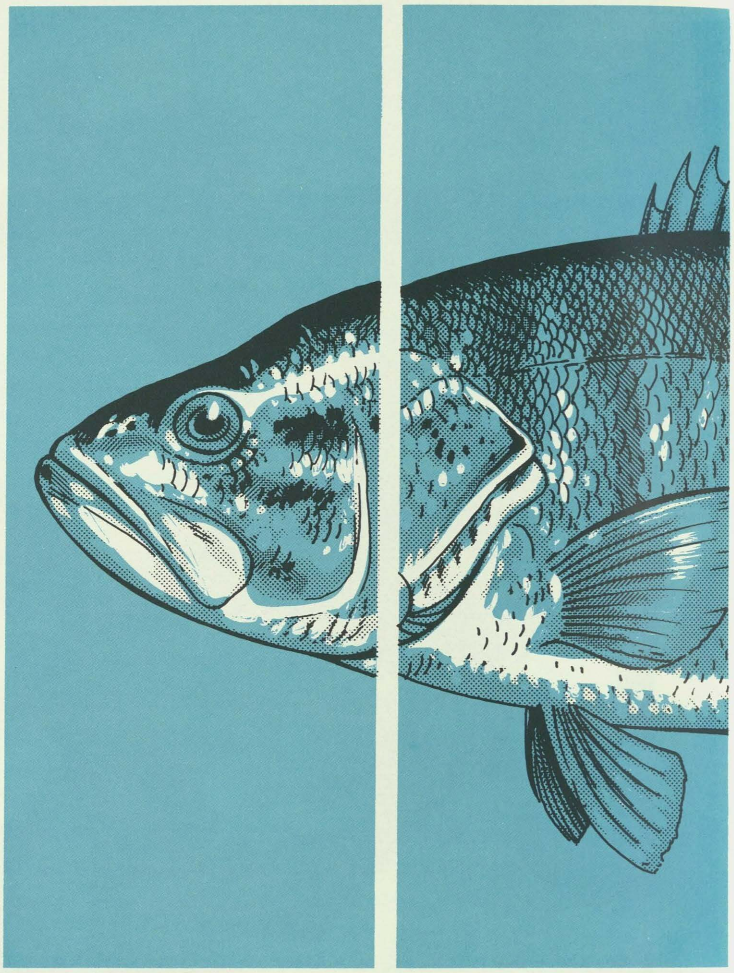
Although you may have to sacrifice a lure or two during the learning process, knowing how to fish in vegetation can enhance your fishing skills and improve your chances of landing a lunker.



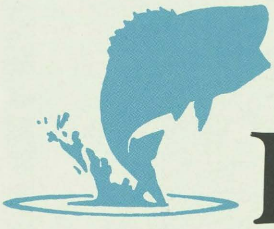
HOW MANY FISH?

In Fresh Water, 291 Species May Be Found in Florida.

By Gray Bass



Largemouth bass **Suwannee bass**



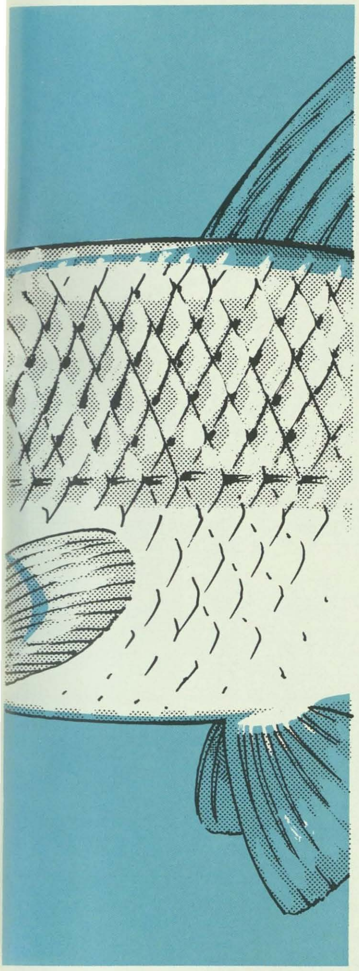
How many kinds of fish exist? Scientists have estimated that the number of living, non-fossil species in the Earth's waters range from 20,000 to 40,000. That's a lot of flipping, flopping, scaly bait and food!

Approximately 675 strictly freshwater fish species inhabit lakes and rivers of the United States and Canada and about another hundred species routinely enter U.S.-Canadian fresh waters from the sea. Some of these, such as Atlantic sturgeon, American eels and American shad, require a stay in fresh water to complete their life cycles. Those which come from the sea to spawn in freshwater rivers (sturgeon and shad) are termed *anadromous* species. Eels migrate from freshwater rivers to the ocean to reproduce and are labeled *catadromous* forms.

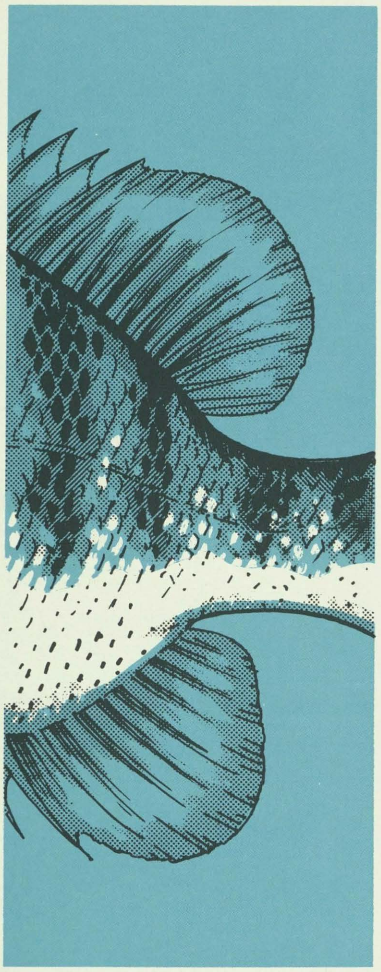
The U.S.-Canadian freshwater species list includes about 32 species from other lands (exotics) that now maintain reproducing populations in their new homes. Common carp and the infamous walking catfish are examples of such introduced exotic fish now living and reproducing in Florida.

Thousands of years ago, peninsular Florida was submerged beneath the ocean. Whatever terrestrial and freshwater aquatic life inhabited the original Florida land mass was eliminated by this flooding, although during that period, some species may have survived in fresh water impoundments on islands in this ancient sea. Now, most, but not all, of the Florida Plateau is again above the surface of the ocean's waves and many species of freshwater fishes have partially recolonized our streams and lakes. However, fish communities in Florida are still lacking many of the fishes found on the American mainland farther to the north and west.

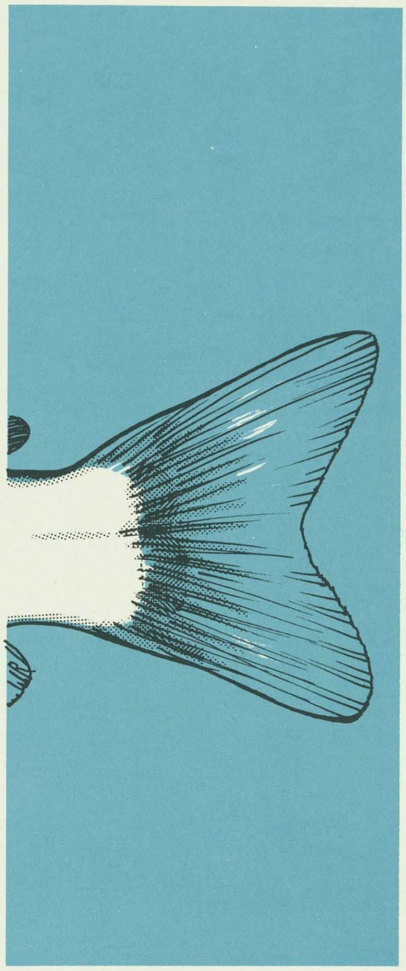
About 115 native freshwater fish species swim the lakes and streams of Florida. If marine species which invade freshwater streams, migratory fishes and exotic fishes are included, 291 kinds may be found, at times, in our state. In the panhandle region of northwestern Florida, the land was not completely flooded, thus, panhandle rivers retained more species of mainland fishes than the peninsula. About one-half of the native



Carp



Bluegill



White catfish

freshwater fish species of Florida occur only in, or west of the Suwannee River system. The peninsula south of the Suwannee River has not yet been fully recolonized by fishes from the American mainland.

Streams containing the largest assemblages of freshwater fish species are the Apalachicola and Escambia, both in the panhandle region. Eighty-three kinds of fish roam the Apalachicola and 81 the Escambia.

Among the fishes of northwestern Florida streams are a number of species which have never been scientifically described and given scientific names to go with their common names. The orangeside darter, blackmouth shiner, greyfin redhorse and a diminutive pygmy sunfish are examples.

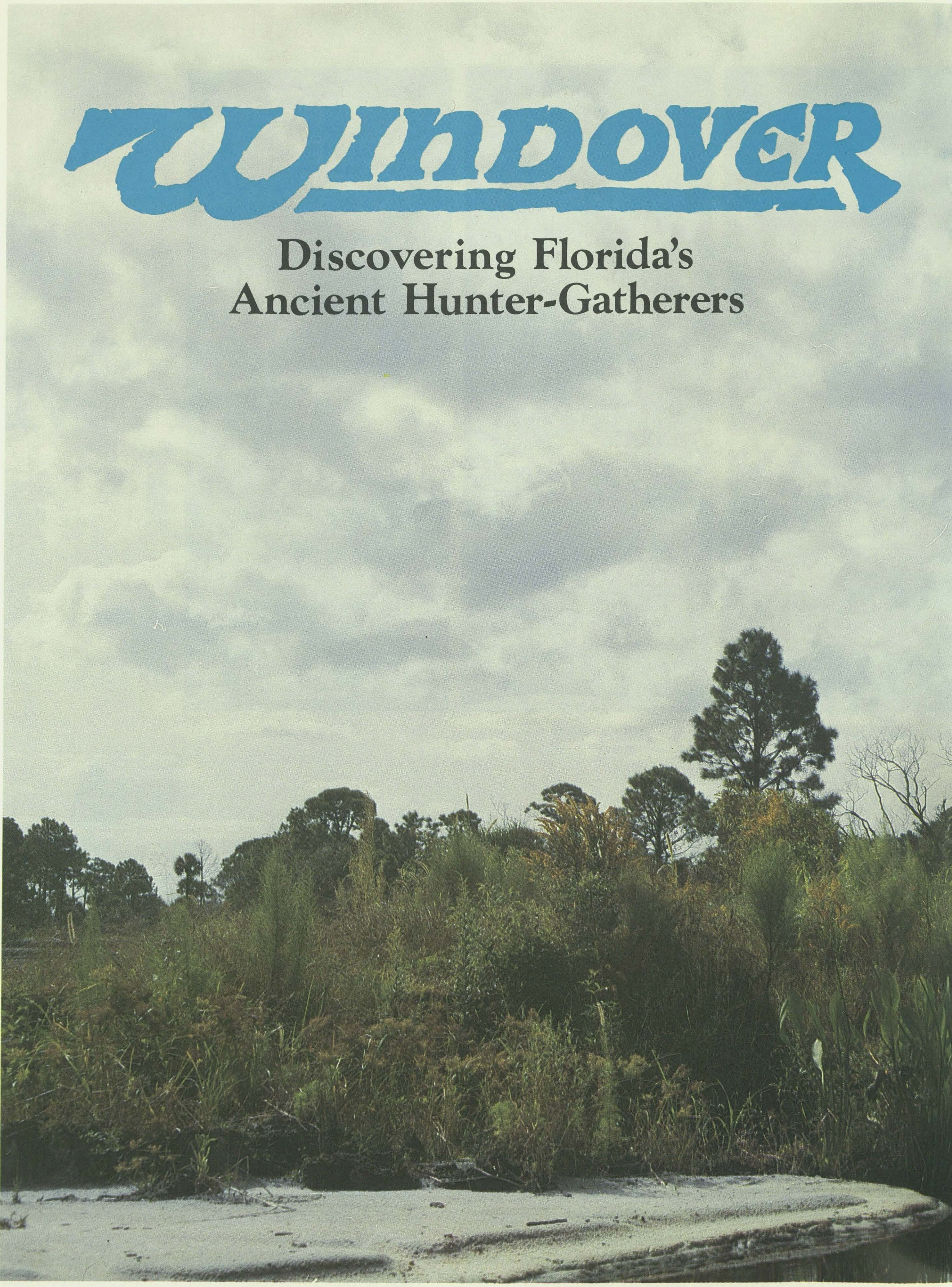
Three Florida species of black bass exist only in, or west of the Suwannee drainage: Suwannee bass, shoal bass and spotted bass. Suwannee bass occur only in the Ochlockonee and Suwannee rivers and nowhere else in the world. In addition, most of Florida's rare, endangered and threatened fishes are restricted to streams of the northwest part of the state. An enigmatic minnow, the blackmouth shiner, apparently survives in only one tributary creek of the Blackwater River near Milton. It had once been reported to exist in one undisclosed site in the neighboring Yellow River; however, efforts by the Commission to find it there have been unsuccessful.

A few small Okaloosa County streams harbor a small darter named, appropriately, the Okaloosa darter. It is known from no other place. Numerous other fish are rare or reach the southern or eastern limits of their geographic ranges in the Florida panhandle. Three game fishes; spotted bass, longear sunfish and shadow bass (a panfish) fall into this category.

Constant surveillance of water quality and vigorous habitat preservation will be necessary to maintain these diverse fish communities in our streams. Flowing waters of the Florida northwest represent much of the high quality aquatic environment remaining in the state, and the Commission is concerned about keeping this quality high, so our fish species continue to live and reproduce.

WINDOVER

Discovering Florida's Ancient Hunter-Gatherers



This quiet wooded pond near Titusville held ancient artifacts until they were first uncovered in 1982.

EDITOR'S NOTE: For all the centuries humans have lived in the land we now call *Florida*, hunting, fishing and gathering of native plant materials have been regular activities. Although the importance of hunting for survival has decreased in our society because of our reliance on domestically produced meats, the earliest Floridians depended directly on hunting as the means for supplying meats other than fish. Both cultures, however, share a continuing dependence on the same environments for most of our fisheries production. And, modern man still harvests many of the same plant species that were harvested thousands of years ago.

In this story, writer Barbara Doran takes us to Windover, a prehistoric mortuary pond and one of the world's most recently excavated and most unusual archaeological sites. Near Titusville, Florida, Windover is a place where early humankind lived and died. Perhaps it is ironic that a mechanized backhoe—a machine used by modern man to alter the surface of the earth—was instrumental in finding the first evidence of human inhabitation at the site. This evidence is estimated to be between 7,000 and 8,000 years old.

By Barbara Doran

Project Photographer: Richard Brunck

Small dense patches of moonlighted fog shrouded the low-lying countryside as I headed south last fall on Interstate 95 to visit the Windover Archaeological Research Project at Titusville. I thought, "Such a strange combination of stars, moonlight and fog." As the long lonely miles passed by, it occurred to me I was looking at the same moon and stars the Windover people saw some 7,000 to 8,000 years ago. Somehow I felt connected to those descendants of Asians and ancestors of the American Indians. I wanted to know more about what their lives were like.

The next day I toured the site with other visitors. Someone asked, "Why did prehistoric people choose to live here?"

Project director Dr. Glen Doran replied, "Are you kidding? This place is a veritable ancient food mart!" The hammock provides all the vegetables, meats and supplies you could want. We might not consider these natural resources things to eat, but it would certainly be like a modern convenience store compared to the sparse food sources available to American Indians then living in the West."

Doran and other members of the Florida State University research team tried to answer visitors' questions to build a better understanding of that small band of people who lived in that part of Florida some 4,000 years before the Egyptian pyramids were built.

"Reconstructing prehistoric culture is like putting together a picture puzzle bought in a sack at a garage sale," Doran said. "You really don't know for sure if you have all the pieces. You are working without knowledge of what the total picture was originally and you can only guess what the missing pieces logically should be."

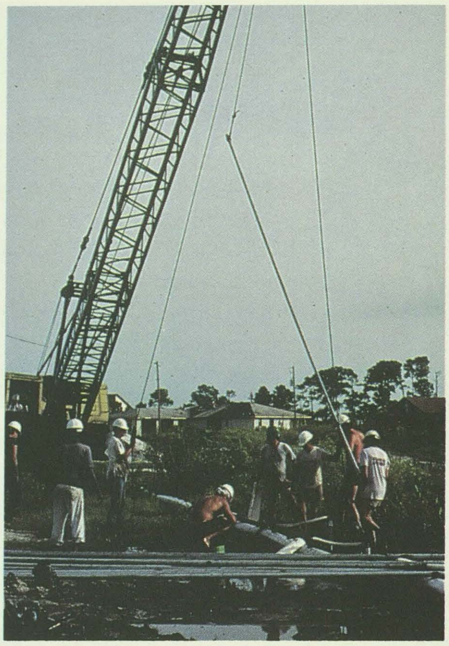
To take the garage sale analogy a step further, assume that newer items are more likely to have all the pieces than things which have been around longer. Such is the case in the archaeological record. Back to 2,000 years or so ago, archaeologists have more pieces to the puzzle and can therefore reconstruct better documented and more accurate pictures. Beyond 2,000 years, information is much more sparse and fragmented, and the archaeological record is not as clear.

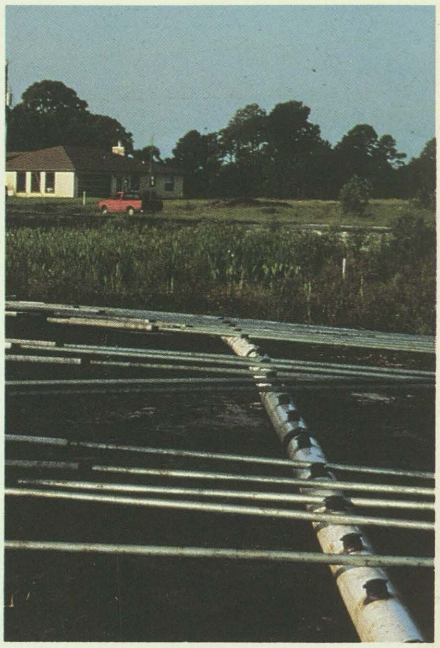
Sometimes anthropologists reluctantly speculate on the lifestyles of prehistoric people, but after three field seasons of recovery at Windover, the Early Archaic Period of human inhabitation in Florida has new dimensions.

So what can be said so far about these early Floridians and their lives some 8,000 years ago?

They were similar to other people around the world. Farming (the Neolithic Revolution) was underway in very few places: the Nile Basin, around the Mediterranean Sea, South America, Asia and the central Mexico highlands. In China, the earliest metallurgy in copper had started. Except for a few isolated places, most people 8,000 years ago hunted, fished and gathered other wild foods for their existence. At Windover, Doran wonders if the life of a hunter-gatherer may have been easier because of the abundant resources there.

"It is highly likely that those people hunted and fished from the





Richard Brunck-Photographs

EKS Inc., owner of Windover Farms, contacted Florida State University's Department of Anthropology after human remains were found during road construction there. EKS Inc. also provided initial funding for study of the site. Because the pond bottom consisted of peat that was up to six or seven feet deep, and the pond was flooded, an elaborate pumping system had to be used to drain it for digging.

Richard Brunck-Photograph

St. Johns River to the Atlantic Coast," Doran said. "The white-tailed deer appears to be the largest dietary meat source, but the abundance of fish and turtle remains suggest that prehistoric diet had variety."

Remains of nut hulls, burned fish bones and seeds have been found in the abdominal area of several burials and Doran says that analysis of those remains possibly could provide information on prehistoric internal parasites.

Cactus seeds (*Opuntia*), elderberry, blackberry, grapes and the passion flower (*Passiflora*) have also been found. Additional analysis will expand the food items and allow researchers to quantify how much each one contributed to the overall diet.

In addition to providing food, plants and animals were raw materials for tools and ornamentation. Many of those same plant and animal species live today in and around typical Florida ponds.

Some of the tools uncovered at Windover include awls and daggers made from the antlers or bones of deer and dog [*Canidae* (domesticated dog, wolf or coyote)]. Daggers are longer and more pointed than awls but both usually have one pointed end. Awls could have been used as leather punches or possibly as projectile points. Discovery of woven fabric at Windover suggests the awl may have been used as a weaving instrument for packing or separating strands. The fabric itself appears to be made from plants in the palm or palmetto family.

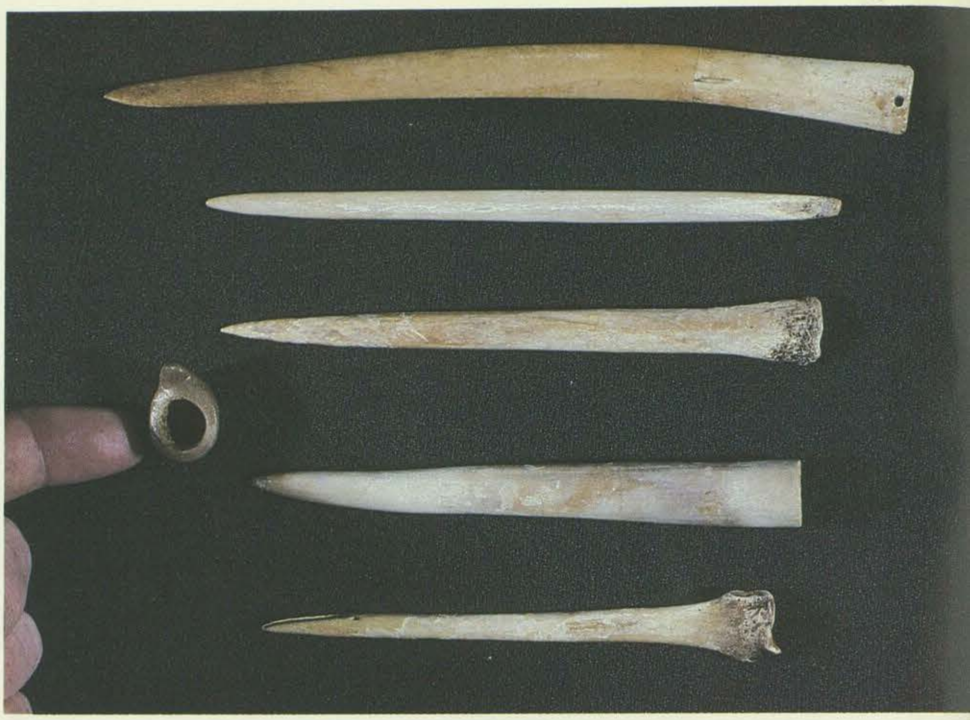
Another tool, smaller than an awl, is a pin which probably was fashioned from deer or dog bones. The pins typically were used to fasten garments, as hair pins and in basketry. Occasionally the pins were used in hafting (securing or binding) stone tools onto shafts. One pin found near the waist of a female could have been a garment fastener.

Needles were made from splinters of mammal bones. These thin tools may have slits which acted as "eyes" on one end and were probably used for sewing, leatherwork or ▷

Richard Brunck-Photograph

On-site excavation at Windover was ongoing for three years. The drained peat was painstakingly removed, little by little, to uncover the remains of a prehistoric group of people who lived in Florida between 7,000 and 8,000 years ago. Because there was a neutral pH, heavy mineralization and a lack of oxygen in the pond, bones, wooden artifacts and finely woven fabric were well preserved when first uncovered, but upon exposure to air, began to decompose immediately.

puncturing.


John Waters Jr.-Photograph

Bone and antler were important materials for making pointed tools such as awls and projectile points. Other tools were also made of these materials, such as the *atlatl* "hook" shown on the left. These artifacts from Windover are in remarkably fine condition.

> **"The quality of preservation, the number of subadults and the lack of pottery gave me the first clues to the antiquity of the site."**
>
> **—Dr. Glen Doran**

Windover hunters used *atlatls* (pronounced *at-lat-els*), difficult-to-describe, multi-part, spear throwing tools. At Windover, specimens of this tool have been found—including the hook, the shaft and stone weight.

Essentially, atlatls give the spear hunter added thrust and leverage by adding another three or four feet of momentum (arc) to the throw. Interestingly, as late as 1967, Australian aborigines were observed consistently hitting two-foot square targets at 110 to 120 feet with spears projected by atlatls.

Other tools found at Windover are made from marine shells (*Busycon*). These were used for digging or dipping and the ends also may have been used in woodworking. Among several shark teeth that were found, one had holes drilled at each corner of the root (presumably to help tie it to a handle). It was probably used as a fine cutting or engraving tool on wood or bone. The shark tooth was found within inches of a carnivore canine tooth which may have been worn as a pendant.

Archaeologists found several unidentified artifacts made from deer antler, manatee bone and wood. The challenge of a wet site like Windover is the preservation of wood and bone—materials not usually found at other sites. Some artifacts are of unknown use, but the deer and manatee bone artifacts may be shaft wrenches used to straighten warped spear shafts. One wooden artifact is about six inches long and tapered, with two linticular (eye-shaped) holes drilled or cut in top and with one circular hole drilled from the small end which intersects with one linticular hole. Another yet unidentified wood piece, made from soft pine, is about the size of an adult thumb and has geometric patterns cut on the surface.

Other plant artifacts include fabric, beads made of seeds, a pestle-like object and a long, flat paddle-like tool possibly used in weaving.

Oak and pine stakes seem to have been used to hold down the funeral wrappings of the deceased below the pond water. A number of the stakes had been sharpened and several show cut marks on them. Some are as long as five feet. Most are 2.5 inches in diameter and have been debarked and smoothed with a stone or shell cutting tool.

The remains of one child were found with a variety of artifacts, including sabal palm seed beads, a turtle shell and a piece of wood shaped into a grinding tool (two-ended pestle). Additionally, several pieces of deer bone were with the child.

"I don't know why the grinding tool was buried with the child," Doran said, "but we have found that subadults at Windover were frequently buried with more goods while adults were buried with fewer goods."

The turtle shell may have been made into a rattle and intentionally

Only a few stone bifaces were found. They were made of chert, a flint-like material.

Finely crafted and smoothed, this small artifact formed the "hook" on an *atlatl*.

Richard Brunck-Photographs

Wooden stakes were so well preserved the type of wood could be identified.

The *atlatl*, used to throw a spear, sometimes had a weight attached to it.

Richard Brunck-Photographs

Shells seem to have been an important tool to the people at Windover. These may have been used for digging, dipping or other work. The upper one shows hand-inscribed cut marks. The mollusk from which these shells were harvested is a marine species.

John Waters Jr.-Photograph

buried with the child.

In 1986, three artifacts found were barbed bone points which look like small harpoon points.

Stone bifaces (flaked on both sides) made of chert, a flint-like stone, came from at least as far away as where Orlando is today. This indicates a possibility of trade with other groups or travel.

Many visitors ask, "What about pottery and arrowheads?" Most do not realize that 7,000 to 8,000 years ago (during the Early Archaic Period), bows and arrows apparently did not exist in Florida and pottery would not appear for another 3,000 years or so. Instead of pottery, the Windover people may have used wooden bowls, hide bags and shell cups.

Doran explains that when he first visited the area in 1982, the absence of pottery was one of the first clues to the antiquity of the site.

"The quality of preservation, the large number of subadults and the lack of pottery gave me the first hint that Windover was a special place," Doran said, "but I never dreamed it would turn out to be the site it is."

Information from Windover will increase as research continues and Floridians will continue to get glimpses at the lifestyle of those early inhabitants and what their lives might have been.

At the end of my tour, I sat at the edge of the hammock near the excavation pits and tried to imagine what people 7,000 years from now may think about us. Will they write that the wildlife is the same—or that many of our species became extinct? Will they consider our space centers primitive and our culture simple? How modern will the 20th Century seem?

In 8987, some solitary traveler may see our moon and stars in a clear night sky and think, "These are the same moon and stars that people in Florida saw some 7,000 years ago in the 1980s." Maybe they too, will feel connected.

EDITOR'S NOTE: Barbara Doran is a communications professional in the Tallahassee area and wife of Dr. Glen Doran, Windover project director.

WINDOVER—A TRIUMPH OF COOPERATION

By Barbara Doran

In 1982, during road construction at Windover Farms, a residential development near Titusville, construction workers were demucking a pond to build a roadbed. The backhoe operator noticed a "rock" in the bucket and stopped to look. He knew there shouldn't be rocks in peat. He was surprised to look in the bucket and find a human skull.

Local authorities were notified, but they found no foul play. Windover Farms' owners, EKS Inc., halted construction and contacted Florida State University Department of Anthropology. Drs. Robert Dailey and Glen Doran, anthropology professors, visited the area.

Doran felt that the material warranted further examination and he suggested radiocarbon dating. When two dates came back—7,210 ± 80 and 7,330 ± 100 B.P. (before present, 1950) the antiquity of the site was established and budget proposals for further study were submitted to the 1983 Florida Legislature. In 1984, funding totalling $800,000 was approved for three years.

"Windover Archaeological Research Project would never have happened if the backhoe operator had not taken the time and interest to stop and report what he found," Doran said. "And, if the landowners had not been willing to halt construction, reroute the road, financially support initial investigations and help secure funding, we would not have benefitted from the unbelievable finds at Windover."

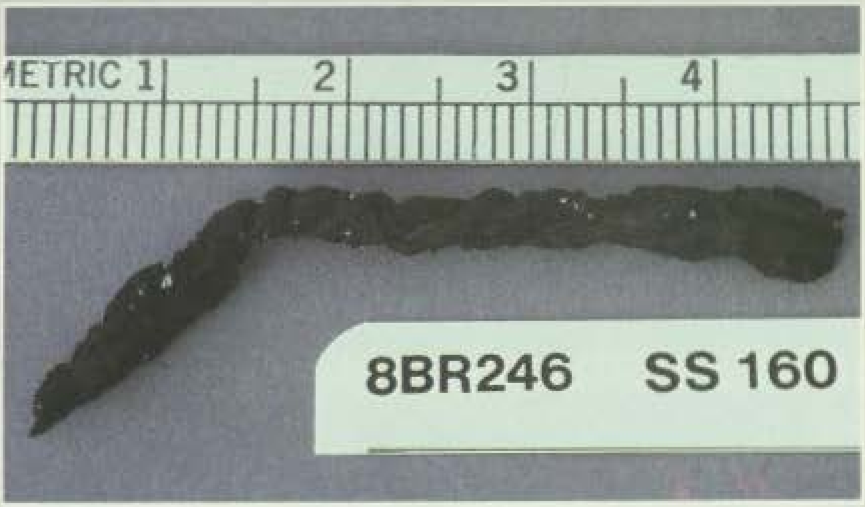
Without cooperation and funding, the unbelievable finds made at Windover might never have been made.

This image contains sensitive material that may pertain to the Native American Graves Repatriation Act (25 U.S.C. 3001-3013) and is redacted from the digital version

Richard Brunck-Photograph

A freshwater turtle shell *(at left)* was found near the remains of a child. Subadults were buried with more objects than were adults. Perhaps the shell had been made into a rattle.

The finding of well-preserved fabric *(below)* from the Early Archaic Period is very rare. Seven basic weaving patterns were found in fabric uncovered at Windover.



Richard Brunck-Photograph

Windover was a mortuary pond where intentional human burials took place. It was a shallow wooded marsh at the time of the burials. This kind of burial pattern is unique to central and southern Florida. The burials took place over approximately a 1,000-year period 7,000 to 8,000 years ago.

The chemistry of the peat and the pond water contributed to the excellent preservation of human remains and artifacts. The water conditions were anaerobic (no oxygen), heavily mineralized and neutral in pH (neither acidic nor alkaline).

Most Florida peat bogs began forming about 6,000 years ago, but the one at Windover began forming nearly 11,000 years ago, providing added insight to Florida's prehistoric climate. In order to excavate Windover, an extensive pumping and drainage system was used to allow excavation 10 feet below the pond bottom.

To date, some of the significance of Windover includes:

- The oldest, largest and most sophisticated sample of woven goods (fabric) in the Americas. Seven different weaving patterns have been identified from the Windover collection.

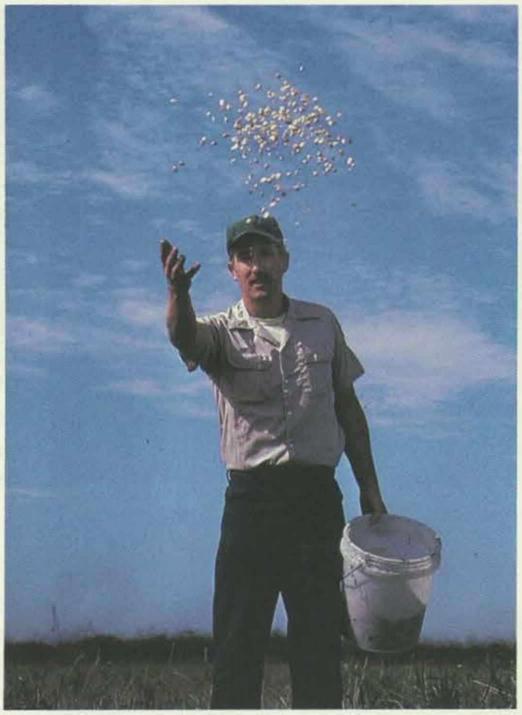
- One of the largest (approximately 140) and best preserved human skeletal samples in the New World from that time period.

- The largest and most scientifically studied sample of ancient preserved human brain tissue (more than 90 brains were recovered). In some samples many external and internal features of the brains were still visible. The most ancient DNA in the world has been extracted and is being studied by research collaborators at the University of Florida.

Continuing studies are underway at 10 research institutions across the nation. During the three years the excavation was open to the general public for tours, more than 15,000 people, including many school groups, visited the site. ◆

EDITOR'S NOTE: Windover earned the first Southeastern Archeological Conservation Award in recognition of the landowner's support. Dr. Glen Doran was named "1986 Floridian of the Year" by the Orlando Sentinel *editorial board for his work at the Windover site and for his efforts to help educate the public about Florida's rich prehistoric heritage.*

EDITOR'S NOTE: The ancient fabric found at Windover will cost an estimated $55,000 to preserve. The Florida State University Foundation will receive contributions specified for this purpose.



Spiked Corn and Sandhill Research

Text and Photographs
By Ann Jerauld Morrow

"Green, aluminum, red, blank." The color sequences were read off by a hunched observer as he peered through a spotting scope out the open truck window. Space was cramped inside the small Commission pick-up truck and the windows were fogging up in the early morning chill.

Steve Nesbitt, senior biologist at the Commission's Wildlife Research Laboratory in Gainesville, kept his telescope trained on a group of 10 sandhill cranes that were earnestly feeding on piles of shelled corn which had been strewn among the tufts of grasses and sedges along the edge of Paynes Prairie in southeastern Alachua County.

Biologist Anne Wenner watched the same group of birds through her binoculars as she periodically recorded Nesbitt's readings in a notebook. A simple transcribing method translated an otherwise cryptic conversation into a meaningful description of how the bands were arranged on each crane's thin legs.

The bands were fitted on the birds above and below the ankle joint and were read clockwise; *upper left, upper right, lower right, lower left.* In addition to the colored bands, each bird wore an aluminum U.S. ▷

Biologists watch carefully as the sandhills feed on corn to which a tranquilizer has been added.

After about 45 minutes, the cranes become somewhat uncoordinated and unable to fly.

Captured birds are carried out of the marsh, with special care being given their slender legs and neck.

Fish and Wildlife Service band which had been stamped with a coded identification number. Back in the research laboratory, the color codes would be entered into a computer that serves as a handy reference guide to where, when and how the birds were first captured and, for some, studied again later.

Florida supports a resident sandhill crane population numbering between 5,000 and 6,000 and the state is annual host to an additional 15,000 to 18,000 migratory sandhill cranes during the winter months. Migratory flocks are commonly seen and heard in peninsular Florida as they fly high overhead, announcing their presence with sonorous, bugle-like calls.

An hour and a half later, talk in the truck had turned to the subject of breakfast and hot coffee, just before the real work was about to begin. The cranes had not been feeding on ordinary corn. *Alphachlorolose*, an oral tranquilizer, had been added to the corn which had been spread out at the bait site before sunrise. The cranes, conditioned to being fed at designated sites during the previous week, were caught by surprise that morning.

Forty-five minutes after feeding, the drug began to take effect, and the cranes' graceful and elegant movements were transformed into a series of miscalculated steps and long pauses—an inebriated choreography. Some birds resembled gray bundles on the ground, their long slender necks appearing especially fragile and vulnerable.

Nesbitt and Wenner emerged from the truck, organized a small group of helpful volunteers who were on the scene and slogged into the marsh to retrieve the tranquilized birds. Timing was important because a tranquilized bird can drown if it wanders into deep water. Young birds occasionally eat more than their share of corn, and they had to be watched more closely for signs of overdose. When captured, each bird had its wings and legs secured by a burlap wrap in order to prevent injury during transport to the laboratory. A few grackles and blackbirds also ate some of the treated corn and they too were carefully collected and placed in a specially constructed pen for the ride. They would recover later, along with the cranes. Finally, the bait site was checked one final time to ensure that all the tranquilized birds were safely removed.

At the laboratory, situated on the

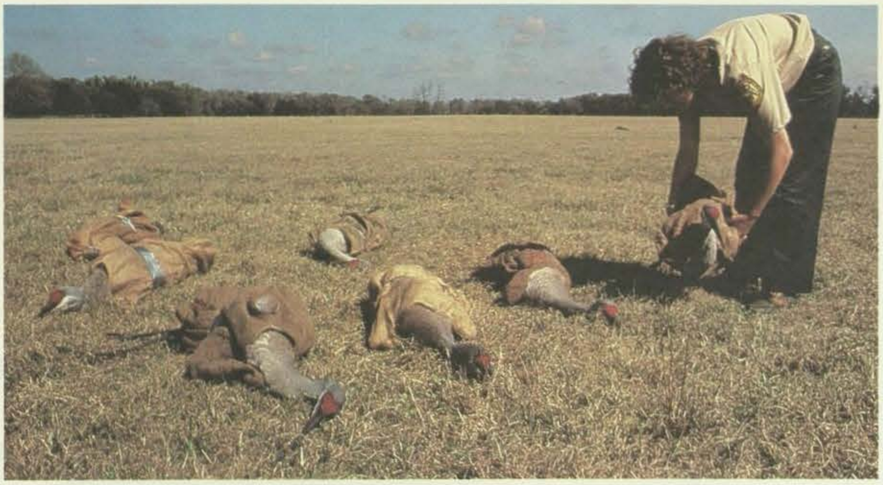
northern edge of Paynes Prairie, the birds were "unwrapped" and placed in recovery pens. One by one, they were then brought to a work table, where they were measured and weighed. Some were fitted with unique color-coded leg bands. If previously banded (20 percent were recaptured birds), the old bands were checked for wear and missing ones were replaced. Some of the wing feathers on each bird were marked with a red dye so molt patterns could be checked on future recaptured birds and so a technique for estimating age, based on these patterns, can be developed. Occasionally, a crane was fitted with a lightweight radio transmitter so that future information on daily movements, family associations and nest locations could be collected.

Several hours later, all the captured cranes had been examined and all were starting to walk on wobbly legs, inside the temporary enclosure. The revived blackbirds were noisily proclaiming their displeasure at being confined. Later that afternoon, a gate would be opened and the cranes released back to the prairie.

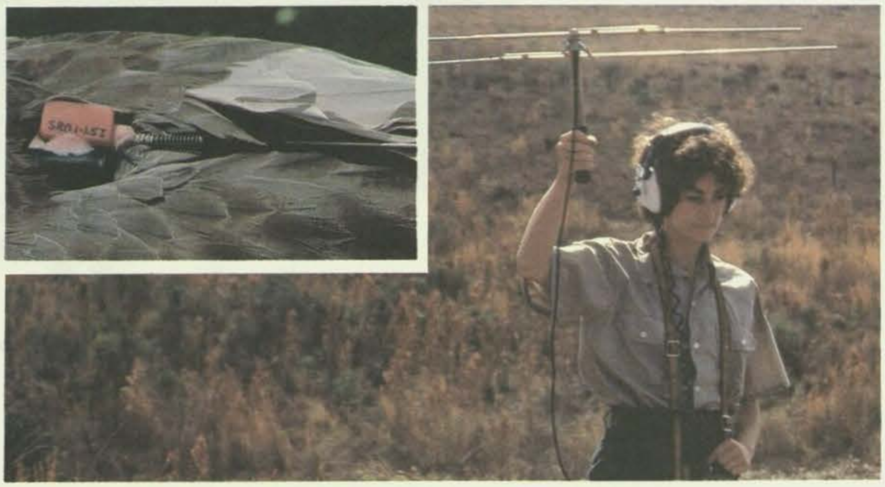
Florida is the only state which regularly uses tranquilizers in research on sandhill cranes. This capture technique has been used safely, however, for almost 18 years by the Commission. So far, more than 1,200 resident and migratory cranes have been captured and studied using this method.

The resident Florida sandhill crane is classified as *threatened* because the population is declining. The Commission's study will help discover the reason why. Useful information has already been collected. For example, it is now clear that adult pairs are usually found within a mile or two of their nest sites.

The sandhill crane study has also defined migration routes and breeding grounds for migratory cranes, which winter in Florida, and it is hoped that continued study of color-marked cranes in the field will provide a greater understanding of this species lifespan, mortality rate and other life history information.



Each captured bird is gently wrapped in burlap to safely secure it for transport to the Wildlife Research Laboratory.



Some cranes have been fitted with lightweight radio transmitters which emit a signal that can be tracked by radiotelemetry. Much has been learned about migration and other behaviors from the use of this technique.

Florida has a resident population of sandhill cranes which do not migrate. Some of them nest on Paynes Prairie, near the Commission's Wildlife Research Laboratory in Gainesville.

The hunter in this blind is hard to see because he is not wearing hunter-orange. Tom Gaskins says turkeys are colorblind, and that camouflage is not only unnecessary to bag a turkey, but is dangerous.

Just before the opening of turkey hunting season, I dropped in to see my old friend Tom Gaskins, well-known throughout the turkey hunting community as a hunter and as a maker of one of the most effective cedar-box turkey callers on the market.

He and his wife Gin have lived on the banks of Fisheating Creek in south-central Florida since the 1930s, and Tom's made a living for his family by selling cypress knees and making his famous turkey caller.

It was a chilly night, and as I stood warming myself by Tom and Gin's little wood burning stove, he was glancing through a recently published book about hunting for wild turkeys he had just received.

"This is utter *nonsense!*" he exclaimed as he held up the book so

DON'T BECOME THE TURKEY THAT GETS SHOT

Text and Photographs

By Max Hunn

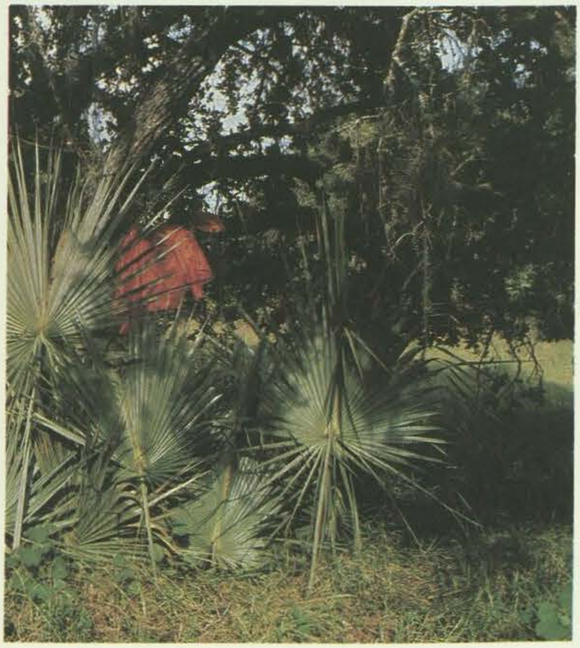
I could read the dust cover. "It's *balderdash!*"

Knowing Tom was an expert turkey hunter, I was intrigued by his energetic reactions to the book. He was really upset.

Tom has tramped through the swamps and palmetto lands of south and central Florida hunting turkeys for half a century. He's bagged his share of the "bronze ghosts," and living on the edge of Fisheating Creek, he's been a keen observer of wild turkeys both in and out of hunting season.

"What's the matter with the book?" I asked.

"This author should know better," he replied. "I've hunted with him. You don't need camouflage or dark-colored clothing to hunt turkeys! Such clothing is dangerous! Remember what ▷



The same scene shown on the previous page, but with the hunter using his hunter-orange jacket to mark his blind to make himself more visible.

happened to Russ Smiley?"

Russ Smiley is a noted wildlife artist, a long-time friend of Tom and an avid turkey hunter. One day he was perched in a palmetto turkey blind in the Fisheating Creek area. It was a cold, drizzling fall day. Russ was wearing camouflage overalls, partly for warmth, but mainly because he believed camouflage was a necessity for turkey hunting.

He was expertly calling turkeys with one of Tom's cedar-box callers. Suddenly he shifted his position slightly, the palmetto fronds of his blind moved, then *BOOM*! A load of number 5 shot from a double-barrel shotgun smashed into him from 40 yards away.

Forty-odd shot penetrated Russ' left shoulder, neck and head. It was a frantic ride to the hospital in Clewiston, 35 miles away, but X-rays showed none of the shot had hit any vital organs. He was fortunate to escape fatal injury.

Perhaps some of the shot had been slowed by the palmetto fronds of the blind, or perhaps it was just luck. Anyway, Russ was back turkey hunting the next day, wearing an assortment of bandages, *but minus his camouflage clothing*! The night following Russ' accident, Tom consigned his camouflage outfit to the scrap heap forever.

Russ' hunting accident was no isolated incident. Other turkey hunters have been hit in very similar situations. While there are undoubtedly more hunting accidents among deer hunters, turkey hunters aren't immune.

Russ' hunting accident was no isolated incident. Other hunters have been hit in similar situations.

When a federal judge from Miami was shot while he was turkey hunting along Fisheating Creek, Tom learned of that incident when the judge dropped by to get another striker for the cedar-box turkey caller he'd been using. It was one Tom had made. A wild shot had not only hit the judge, but also had put two holes in the cedar-box. In the uproar, the judge lost his striker. He had come to see Tom to get another one to determine if his caller would still work with holes in it. Tom gave the judge another striker at no charge.

"I just don't see why experienced hunters keep telling everyone they should wear camouflage," Tom fumed as he continued to comment on the book. "If you wear hard-to-see clothing you're asking for a shotgun blast in the back. I wish some of these self-proclaimed experts would learn the truth.

"You know Russ would have been a lot better off if he'd been wearing bright yellow or hunter-orange colored clothing the day he got blasted. I don't think camouflage is any more necessary for successful turkey hunting than it is for deer hunting," he continued. "Remember what I told you about my brightly colored experimental turkey blind?"

I did. Tom's experiment was proof to me that color is meaningless in turkey hunting. After he had abandonded camouflage clothing, Tom was curious whether or not he had made the right decision. From a safety standpoint, he had no doubts, but from a practical, hunting standpoint he wondered if bright colors would easily spook wild turkeys.

To tell more about the experiment, one hunting season he erected a blind in a suitable location where he knew turkeys were feeding. It was an *outlandish* affair. He had taken a large white cloth and painted bright red words on it. The blind *screamed* with color. Eye attracting? And how! Tom estimated that blind could be seen for half a mile through the trees—more than an adequate distance to spook a

Tom Gaskins threw away his camouflage hunting clothes after Russ Smiley was accidentally shot while sitting in a blind calling a gobbler. Both men now recommend hunter-orange

keen-eyed turkey.

With the colorful blind in place, he crouched inside and began *yelping* with his cedar-box turkey caller. It wasn't long before a gobbler walked within 30 yards of the gaudy blind. Slowly he walked closer, paying no heed to the wild colors.

Because Russ and Tom's son were calling from another blind that day, only 200 yards away, Tom didn't shoot. He quit calling and the turkey passed his colored monstrosity very casually, before gradually moving within range of the other hunters. They missed their shots, but not because of Tom's blind. They just plain missed. The important fact to Tom was that the turkey had paid no attention to the colorful blind. He reasoned that if color spooks a turkey, then that one would have been running for its life.

However, that's not Tom's only experimental finding. He left the blind in position and returned a few days later. To his surprise, he found fresh turkey tracks within inches of the thing. If color scares turkeys, Tom reasoned, he must have encountered some real oddballs. So, you will never convince him that camouflage is important in turkey hunting.

He had another experience that shows turkeys aren't spooked by color. One season he found an abandoned hunt camp with a crude little shack still standing. It was made of a piece of aluminum on one side, with cloth on the other. It definitely did not look like any part of the natural habitat. Yet, Tom crouched behind this outlandish "blind" and successfully called turkeys in close. White and aluminum could hardly be called camouflage colors.

Tom made the decision to abandon camouflage more than a quarter of a century ago, and has never regretted it. He's shot turkeys while wearing all kinds of colors, and he cannot attribute any failures to his wearing bright colors. He's missed a few shots, like any other hunter, but never because he wasn't wearing camouflage clothing. To him, camouflage is just nonsense that has been fostered by unknowledgeable hunters.

"I suspect a turkey is either colorblind, or pays no attention to color. Color doesn't count, but movement does," he says. "And I think many hunters miss their opportunity, not because they're visible, *but because they move at the wrong time.*"

Tom has confirmed his theory of the uselessness of camouflage by collaborating with other hunters on their field experiences and attire. He has found many experienced hunters agree with him that camouflage clothing is not necessary.

"Naturally, there are some who believe in camouflage." Tom acknowledges. "But they'll learn," he adds. "I only hope they don't have a shotgun go off in their ear to teach them."

Tom gives five basic rules for safe turkey hunting:

1. Don't wear camouflage clothing! Make certain other hunters can tell you're a human and not a turkey.

2. Don't shoot blindly at any movement you see. Be certain you're firing at a turkey, not at a person, a cow or some other unintended target.

3. Don't make careless movements while in your turkey blind. Although turkeys aren't bothered by color, they are spooked by the slightest movement. Careless movements have spooked more birds than color ever has.

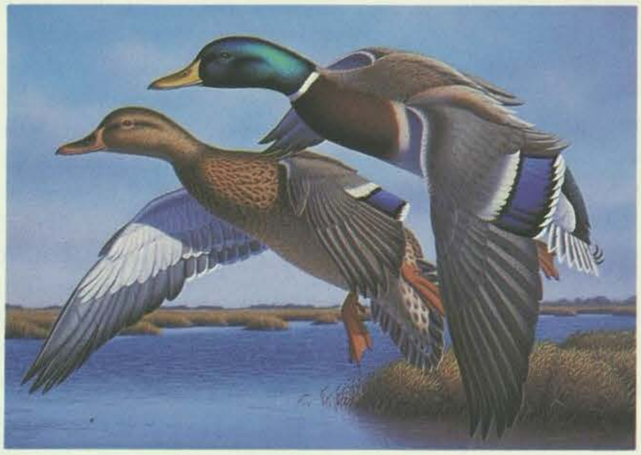
4. Learn to call up your turkeys. You can be far more successful by getting the turkey to come to you than you will ever be trying to hunt them by moving through the woods or swamps. A keen-eyed turkey will spot you long before you see him.

5. Build a blind that another hunter will recognize as a blind. If you don't want to wear bright colors, then hang a piece of colored cloth (hunter-orange for example) on your blind, or use flourescent-orange tape. Turkeys won't pay any attention, but another hunter should.

Many experienced hunters agree with Gaskins that camouflage is not necessary to bag a turkey.

1987-88 STAMPS FOR WILDLIFE CONSERVATION

By Paige Moody



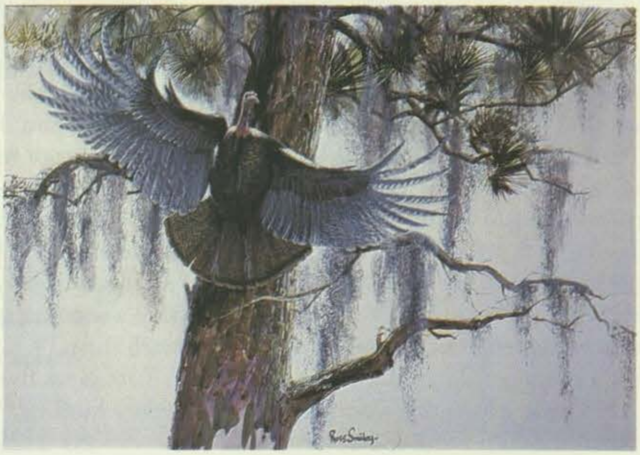
1987-88 Florida Waterfowl Stamp

Mallards, one of our most colorful waterfowl, have long been a favorite with hunters and bird watchers alike. They are the subject of this year's Florida Waterfowl Stamp, which shows a reproduction of an original artwork by Ronald Louque.

Louque has several state duck stamps to his credit, and in 12 years of professional painting, his work has raised money and gained international exposure for waterfowl conservation.

Created in 1979, Florida's Waterfowl Stamp program has generated roughly $500,000. Florida law requires all hunters to purchase the $3 stamp in addition to the federal "Duck Stamp" and a hunting license to hunt waterfowl in Florida. Revenue from stamp sales helps fund waterfowl management efforts in the state.

Prints of Louque's artwork are available from Midwest Marketing Co.; Sport'en Art; R.R. 3; Sullivan, IL 61951. For information on price and locations in Florida where the prints may be purchased, telephone (217) 797-6354.



Florida's 2nd Wild Turkey Stamp

Wildlife artist Russ Smiley's work has appeared in magazines such as *National Geographic* and *Sports Afield* and in art galleries across the nation. His unique painting of a Florida wild turkey in flight has been chosen for reproduction on the 1987-88 Florida Turkey Stamp.

Turkey hunters have been required, since last year, to purchase the $5 stamp in addition to a hunting license before taking or attempting to take a turkey in Florida.

Revenue from sales of the stamp goes to the State Game Trust Fund and will be used to enhance turkey populations through harvest and habitat management.

Prints of Smiley's art are available through the artist: Russ Smiley; 8501 Northeast 4 Avenue Road; Miami, Florida 33138.

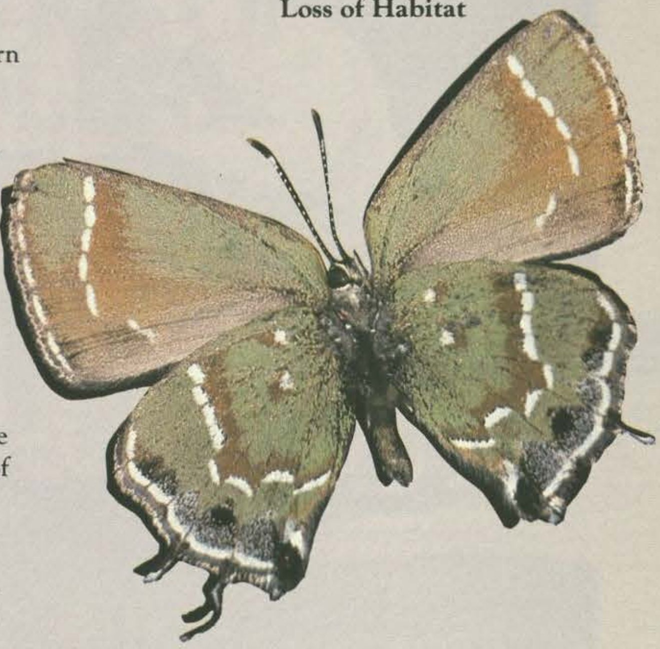
Delicate Balance

Species: Sweadner's Hairstreak Butterfly (*Mitoura gryneus sweadneri*)

Florida Status: Threatened by Loss of Habitat

The delicate Sweadner's hairstreak butterfly (*Mitoura gryneus sweadneri*) is a small, colorful butterfly named by noted lepidopterist Frank H. Chermock in 1944. The "type specimens" from which he described this new butterfly were collected at St. Augustine on the northeastern coast of Florida. This site remains the center of this rarity's distribution in our state.

Considered very local and usually very rare, Sweadner's hairstreak has been found in several sites north of St. Augustine and south to New Smyrna Beach, but virtually everywhere, it is threatened by reduced available habitat due to land clearing for housing and other development. In the St. Augustine area, this butterfly hangs on around the old St. Augustine Lighthouse Historical Landmark. In late 1986, after learning of the trend towards irreversible habitat loss for the Sweadner's hairstreak, the mayor of St. Augustine led a drive to enact a city ordinance to protect the butterfly and its only known native foodplant, Southern red cedar (*Juniperus silicicola*). St. Augustine thus became the second city in the United States to protect a threatened butterfly site by law. (Pacific Grove on the central California coast protects the common monarch butterfly.)



Extraordinarily little has been learned about Sweadner's hairstreak since it was discovered, in contrast to better-studied endemic Florida butterflies such as the Schaus' swallowtail of the Florida Keys and the Florida atala butterfly (see FLORIDA WILDLIFE, May-June 1986).

The butterfly's life history has been equally little-studied. We know the colony at St. Augustine annually produces at least three full broods of adults in March-early April, June and August. There may be a fall brood of undetermined size in October. The adults of both sexes appear to occupy a small home range, generally on a single large cedar tree or on several closely adjacent cedars. However, the males are strongly territorial and chase other adults that enter their defended areas. Thus, a maximum of three or four adults may be found spaced around a single tree.

The egg of Sweadner's hairstreak is pale green, and the young larva passes through several molts as it grows. The mature caterpillar is flattened and slug-like in shape, but much more beautiful than a garden slug, having a deep-green colored body and pale-green diagonal stripes high on the sides. The larva is superbly camouflaged on the green scaly twigs of the red cedar trees. The pupa is dark brown and probably serves as the hibernating stage for the species during the short, north Florida winter. For unknown reasons, the butterfly seems to be rather tightly adapted to coastal climates and is rarely found very far inland, despite the much wider inland distribution of Southern red cedar.

Thus, the Sweadner's hairstreak is a little-understood component of Florida's resident butterfly fauna. In the worst-case scenario, it may prove to be a unique endemic species living in a very limited and threatened series of small coastal enclaves in northeastern Florida. Basic information is needed on its present distribution and taxonomic placement, and its life history, ecology and population status. There is keen scientific interest in saving this chromosomally unique butterfly from extinction. Popular support in the Jacksonville and St. Augustine area is growing and there is considerable hope now that the loss of developmentally attractive coastal areas having red cedar may be arrested. If so, this beautiful and rare nongame species may be saved.

—*Thomas C. Emmel*

john roberge

OUR CHILDREN ARE THE FUTURE OF WILDLIFE

By Mark Damian Duda and Sylvia K. Bates

I'm not exactly sure when in my childhood it happened. It may have been during the many surf fishing trips my father, brother and I took when I was 10 years old. Perhaps it was on the largemouth bass fishing expeditions with my Uncle Buck or the day I received my first pair of binoculars for bird watching. Or maybe it was those memorable camping trips with Boy Scouts, listening to the nighttime serenade of the forest or the exciting experience of tagging black bears with my Youth Conservation Corps work leader.

The exact time and place are unimportant. What is important is that I developed a strong feeling for wildlife and the natural world as a child. The sense of a land ethic and an appreciation of nature were fostered in me at an early age and my parents never failed to encourage their development. This environmental consciousness, first instilled as a child, has never left and I suspect it never will.

Many environmental educators and psychologists agree adult attitudes toward the natural world are greatly influenced by childhood events. And nothing seems to foster positive attitudes toward wildlife more solidly than direct participation in wildlife-related activities.

In a recent study on youth and their attitudes about wildlife, researchers from the U.S. Fish and Wildlife Service found that children who fished, hunted or actively watched birds knew more about wildlife and the natural world than children who did not participate in such activities. Children who did not participate in any type of wildlife-oriented activity exhibited strong anthropomorphic (ascribing human attributes to animals) tendencies. They identified more readily with individual animals and pets than with wildlife populations, displayed more negative inclinations toward hunting and expressed far more fear of wild animals. Active bird watchers, 4-H Club members and hunters, on the other hand, all reflected a strong affinity for wildlife and the outdoors.

In light of this and other supporting studies, the importance of the participatory element in developing an environmental awareness in youth is evident. Yale School of Forestry and Environmental Studies Professor Steve Kellert reports that children who only learn about wildlife in the classroom or in zoos have the least real knowledge about animals and have a far less ecological perspective than certain other groups of children. Kellert notes, "Most zoological parks continue to fail in attempts to go beyond superficial entertainment to instilling a greater appreciation and knowledge of animals..." Learning about animals in school needs to be supplemented by direct encounters with animals and their natural habitats, whenever possible, to impart a deeper understanding and a lasting knowledge.

Another researcher, David LaHart, in a study of wildlife knowledge and perceptions of a group of Broward County eighth graders, found an important link between positive wildlife attitudes and wildlife-oriented activities such ▷

as camping, bird watching, fishing and hunting. Of all the variables he examined, LaHart found that nonconsumptive participation in animal-related activities (hiking, bird watching, wildlife photography) exhibited the highest association with actual wildlife knowledge. He also discovered that class field trips produced a far greater gain in wildlife knowledge than did film strips, class lectures, reading or watching television shows about wildlife. LaHart notes, "...programs that involve field trips and other types of outdoor activities are very important in building environmental knowledge; experience with the resource counts."

The Commission recognizes the value of a hands-on approach to the natural world and sponsors many programs for schoolchildren. Project WILD, an international education program co-sponsored by the Commission, is based on the premise that young people have a vital interest in learning about the Earth as home for people and wildlife. The program incorporates a set of lively, hands-on educational activities designed to foster an awareness and appreciation of wildlife in children.

Children often have a way of making clear what we as adults sometimes find elusive. Cornell University researcher Gerri Pomerantz questioned a group of youngsters concerning what types of wildlife-related activities or items they would like to see more of. It seems children innately know the value of participatory activities—at the top of their list were watching wildlife, visiting nature centers and taking guided nature walks. At the bottom were informational booklets about wildlife.

The Commission's youth camps in Ocala and West Palm Beach offer children the opportunity to spend a summer week learning firsthand about wildlife, hunting, fishing and other outdoor activities. With programs ranging from beginner to advanced, the camp instructors are devoted to teaching wildlife conservation, improving outdoor skills and initiating an environmental awareness in children aged eight to 14.

Brian Burk, an 11-year-old from Merritt Island, spent a week at the Everglades Youth Camp in West Palm Beach. Brian remembers observing deer, hawks, owls, snakes and raccoons while at camp, and enthusiastically remarks, "You learn more when you're outside. When you experience it, you remember it. It's better to be outside and learn about wildlife for yourself!"

Eleven-year-old Molly Rich from Fort Lauderdale agrees. "Learning about animals in the wild is *way better* than learning from movies or in the classroom!" While at the Everglades Youth Camp, Molly saw her first snake. "Before I went to camp, I had never seen a snake and I was afraid of them. After seeing what they're really like and learning about them, I'm not as afraid anymore."

The Commission's youth camps offer children the opportunity to spend a summer week learning firsthand about wildlife.

Children just do not seem to forget direct experiences with wildlife. Michelle Kreiger, an 11-year-old from Clearwater, keenly remembers observing a deer browsing in the early morning sun while at the youth camp.

Remembering his own early experiences with wildlife, Aldo Leopold, the first modern day wildlife biologist, remarked in *A Sand County Almanac*, "My earliest impressions of wildlife and its pursuit retain a vivid sharpness of form, color and atmosphere that half a century of professional wildlife experience has failed to obliterate or to improve upon."

Not only are the childhood years important in the development of positive attitudes toward the environment, but they also appear to play a role in the degree of participation in wildlife-related activities as an adult. Bill Shaw of the University of Arizona found that childhood experiences greatly influenced adult attitudes toward wildlife and recreational activities. Research at the University of Wisconsin indicates that if an individual does not hunt as a youth he or she will probably never hunt as an adult. Surveys of Florida hunters support this research. Almost all Florida hunters began hunting before they were 18 years old.

Encouraging parents and children to share an outdoor adventure, the Commission sponsored six supervised youth hunts at the Camp Blanding Wildlife Management Area in northeast Florida last year. Only young people 15 years of age or less were allowed to hunt, and they had to be accompanied by an adult supervisor. Hunts like these are often a youth's first exposure to deer hunting and, with conscientious guidance, the experience can be important in shaping a child's future attitudes toward wildlife and the outdoors.

"Reverence and respect are hard to teach," notes environmental educator Cheryl Riley. "They must follow from seeing, doing and understanding by becoming involved...We cannot expect the voters of tomorrow to support conservation measures if they are not active users of our natural resources."

The future of Florida's wildlife depends on our children's commitment to wildlife conservation. So take a child bird watching, fishing or hunting; collect bugs and butterflies with your nephew; explore the deep woods with your daughter; introduce your children to the mysteries and beauties of the natural environment. It's not only a lot of fun, but you will be helping them develop positive feelings toward wildlife and the natural world that will last a lifetime.

Outdoor Library

By John Waters Jr.

A Guide to Animal Tracking and Behavior is a new and well-researched field guide usable by anyone who wants to learn more about the vanishing skills of reading "signs" to determine what animals are present in a habitat. A joint work by Donald W. Stokes and Lillian Q. Stokes, with illustrations by Leslie Holt Morrill, this compact, comprehensive book teaches an easy system for being an expert tracker. Special sections detail how to locate and identify trails, burrows, caches and other signs of wild animals. The book also includes information on life histories and behaviors of many species commonly found in Florida. As hunting season comes to a close, this book offers an opportunity for out-of-season activities which can occupy the serious outdoorsman from now until fall. Published in 1986 by Little, Brown and Company; Boston.

Wildlife Management on Your Land will probably benefit the owner of several or more acres more than the typical urban subdivision lot owner. The book is a practical guide which explains in understandable language the what, when, why and how of managing such favorite species as bobwhite quail, mourning doves, wild ducks, squirrels, panfish, bass and other wildlife. Information given here should be of special interest to those who own a section of farmland, wetlands or woodlands. Written by Charles L. Cadieux, the book was published in 1985 by Stackpole Books, Harrisburg, PA.

Wildlife Through the Camera is a beautiful and inspirational work by the British Broadcasting Company about photographing living wildlife. With an introduction by David Attenborough, the text is magnificently illustrated with exquisite color photographs of wildlife from all corners of the Earth. Both beginning and advanced nature photographers will be inspired to do more than snap the shutter. The book stimulates thought about what more is in the scene than simply pictures. Published by the British Broadcasting Company, London, 1982.

Menaboni's Birds introduces us to a lesser-known but spectacular artist, Athos Menaboni, whom critics and art connoisseurs have labeled "the greatest living painter of bird portraits." This praise for Menaboni is well deserved. His original artworks challenge the best of the more noted John James Audubon. Menaboni, an artist of Italian ancestry who settled in Georgia during the 1920s, has completed many highly detailed, anatomically accurate, color portraits of birds during the past 60 years. This interesting, oversize work contains 32 high-quality color plates which show a few of Menaboni's finest works. It is definitely one for the collector of books about wildlife art. Published in 1984 by Clarkson N. Potter Inc., New York.

The Birds of America is a collector's book for those who appreciate America's most famous bird artist, John James Audubon. This oversize, fabulously color-illustrated collector's edition is a must for the serious bird lover's library. Although Audubon's works contain some factual errors because many of his paintings were completed from specimen skins, the beauty, general excellence and aesthetics of his works make up for the anatomical errors. Originally published in 1937, this 1985 reprint by Macmillan Publishing Company, New York, is a one-volume ornithological library. Highly recommended.

Hummingbirds—Their Life and Behavior is an expertly written and photographed study of North American hummingbirds. With a text by Esther Quesada Tyrrell and a wonderful collection of 235 full-color photographs by her husband Robert A. Tyrrell, this dazzling oversize book tells and shows much about our smallest bird species. The photographs include many never before published. Chapters are devoted to hummingbird vital statistics; courtship, nesting and other behaviors; anatomy; aerial dynamics; and their role in our complete ecology. Hummingbird enthusiasts will treasure this treasure of a book. Published in 1985 by Crown Publishers, Inc., New York.

Waterfowl Carving with J.D. Sprankle is a fully illustrated, comprehensive reference and how-to book on carving and painting ducks. Written by Roger Schroeder and James D. Sprankle—winner of more than 250 professional class blue ribbons—this book is highly recommended for anyone who has the yearning to carve decoys or decorative waterfowl. Undoubtedly one of the best books on this subject available, this book will inspire, teach and challenge anyone interested in waterfowl carving to strive for the highest quality possible. Published in 1985 by Stackpole Books, Harrisburg, PA.

It's The Law

By Major Kyle W. Hill

Is it legal to hunt wild turkeys with a rifle?

There is no prohibition against hunting wild turkeys—on private lands—with either a rim-fire or center-fire rifle. On wildlife management areas, however, regulations vary from one area to another. In most of them, center-fire rifles are prohibited during the spring season. Consult individual wildlife management area regulation brochures for details before you plan a hunt. These are available free of charge at county tax collector offices, many of their subagent offices where hunting and fishing licenses are sold and at the Commission's regional offices (see page 48).

Is it legal to shoot a turkey that is on its roost?

There is no law against shooting a turkey while it is on its roost, but it nevertheless is not a good practice. Roost tree shooters often end up shooting a hen in their haste to bag a gobbler before he leaves the roost. Hens tend to roost around a gobbler, and in dim, predawn light, sex identification before shooting is difficult. Ethical sportsmen prefer to call a bird into close range, where positive identification and proper shot placement are possible. Calling a gobbler to you is also more sporting, as well as challenging.

Hunter Education News

By Captain Ed Tyer

Hunter Education Coordinator

A problem we hear more about every day is loss of our wilderness areas, and with this, a loss of part of our heritage. We can help stop or minimize this problem by getting involved, either as individuals or groups. It takes only a minimal effort to contact private conservation groups and government agencies and ask, "What can I do to help?"

There are other ways to become involved in saving our outdoors. Each of us can follow a sense of ethics which actively protects our resources. Several well-used, but often forgotten sayings can serve to remind us of these responsibilities:

Never shoot game that is not going to be eaten.

If you pack it in, pack it out.

When in a refuge or park, take nothing but pictures and leave nothing but footprints.

Never leave a camp until the fire is out.

How often have you noticed litter along the road or seen where vandals have desecrated a tree with a knife, an axe or paint? Maybe you've witnessed a wildlife law violation and thought to yourself, *someone needs to stop that!* Too often the "someone" we are referring to is ourselves. Taking notice of a problem is much easier than taking action to do something about it. I remember an incident from one of my first years as a wildlife officer which illustrated this to me.

I was following a camper along a road when I observed trash being thrown from the passenger's side of the vehicle. I turned on my blue light, stopped the vehicle and asked the driver if he was aware of Florida's litter law. He advised me that he "certainly was."

He also said he and his wife, who was with him, liked to camp and were disgusted whenever they saw trash left in the woods by "outdoor slobs." He added, "They should be thrown in jail!"

It took him a few minutes to realize I hadn't stopped them just to ask their opinions about Florida's outdoor litter law. Suddenly he turned and looked around inside his vehicle. "What did you do with our lunch trash?" he asked his wife.

She admitted she had thrown it out. "I just didn't think," she said apologetically.

Think about how your actions impact Florida's environment. Follow a set of recreational ethics which will allow future generations to enjoy and benefit from our resources.

Conservation Update

By John Waters Jr.

Florida Bass Anglers Spend $615 Million

Florida's bass anglers averaged spending about $27 per in-state fishing trip in 1985-86, a survey by the Commission's Division of Fisheries indicates. Purchases included bait, tackle, fuel, food and lodging. An estimated $615 million was spent during the study year by those anglers.

The survey, conducted by fisheries biologist Scott Hardin, also found that 71 percent of the resident licensed anglers primarily fish for largemouth bass. Eighty percent reported fun and relaxation as their primary reason for fishing.

75 Years of Girl Scouts

Girl Scouts of the United States of America celebrates 75 years of organization this year, with about 3 million young women in the United States being active members today. Founded by Juliette Gordon Low in 1912 in Savannah, Georgia, the organization encourages service, leadership and learning. More than 52 million have joined Girl Scouts.

Girl Scouts has Brownie Girl Scouts for ages 6 through 8, Junior Girl Scouts for ages 9 through 11, Cadette Girl Scouts for ages 12 through 14 and Senior Girl Scouts for ages 15 through 17.

Conservationists In the News

Susan Cerulean has been named Supervisor for the Commission's Nongame Wildlife Section. She has previously worked in the Nongame Wildlife Section, and part of her duties included editing *The Skimmer*, the Commission's nongame wildlife newsletter.

Major Kyle Hill has been promoted from Chief of Inspections and Training to Chief of Field Operations, Aviation and Inspections. He will be in charge of all wildlife officers in the field. Major Hill has been a long-time contributor to FLORIDA WILDLIFE.

Florida's Breeding Birds Show Decline

Numbers of Florida's breeding birds may be declining much more quickly than many people previously believed, says wildlife biologist Jim Cox of the Commission's Nongame Wildlife Section. His prognoses are based on data collected between 1969 and 1983 on annual Breeding Bird Survey (BBS) routes conducted along 36 roadside transects in Florida. The annual surveys seek to estimate population trends for many common bird species from year to year.

The surveys detect some 80 breeding bird species often enough to estimate population trends. Nearly one-fifth of the 80 species have shown declines, but only four species have shown increases.

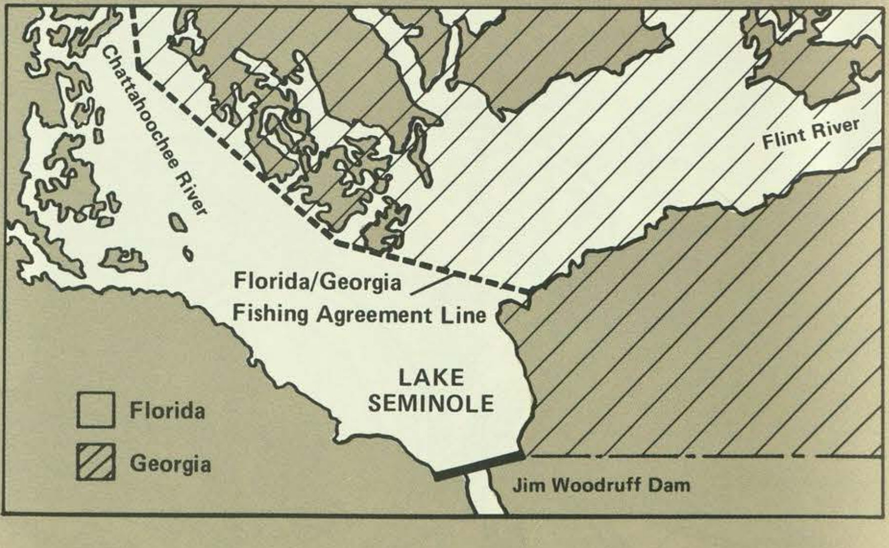
Ospreys and mourning doves have increased, but Eastern bluebirds, common ground doves, red-headed woodpeckers and brown-headed nuthatches have dramatically decreased since 1969, to name a few of the species monitored.

Two Licenses Required To Fish All of Seminole

Although a portion of Florida's and Georgia's Lake Seminole lies within a defined area where anglers who possess a sport fishing license from either state may legally sport fish, most of Lake Seminole lies on the Georgia side of the boundary. For Florida anglers who want to fish both in the shared area *and* in the portion north of a marked boundary line, licenses from both states are required.

Florida anglers who fish only in the shared portion of Lake Seminole, however, need only a Florida license. Georgia anglers need only a Georgia license to fish all of Lake Seminole.

To help anglers determine the boundary, a series of signs are mounted on poles that are set along the boundary line across the lake.



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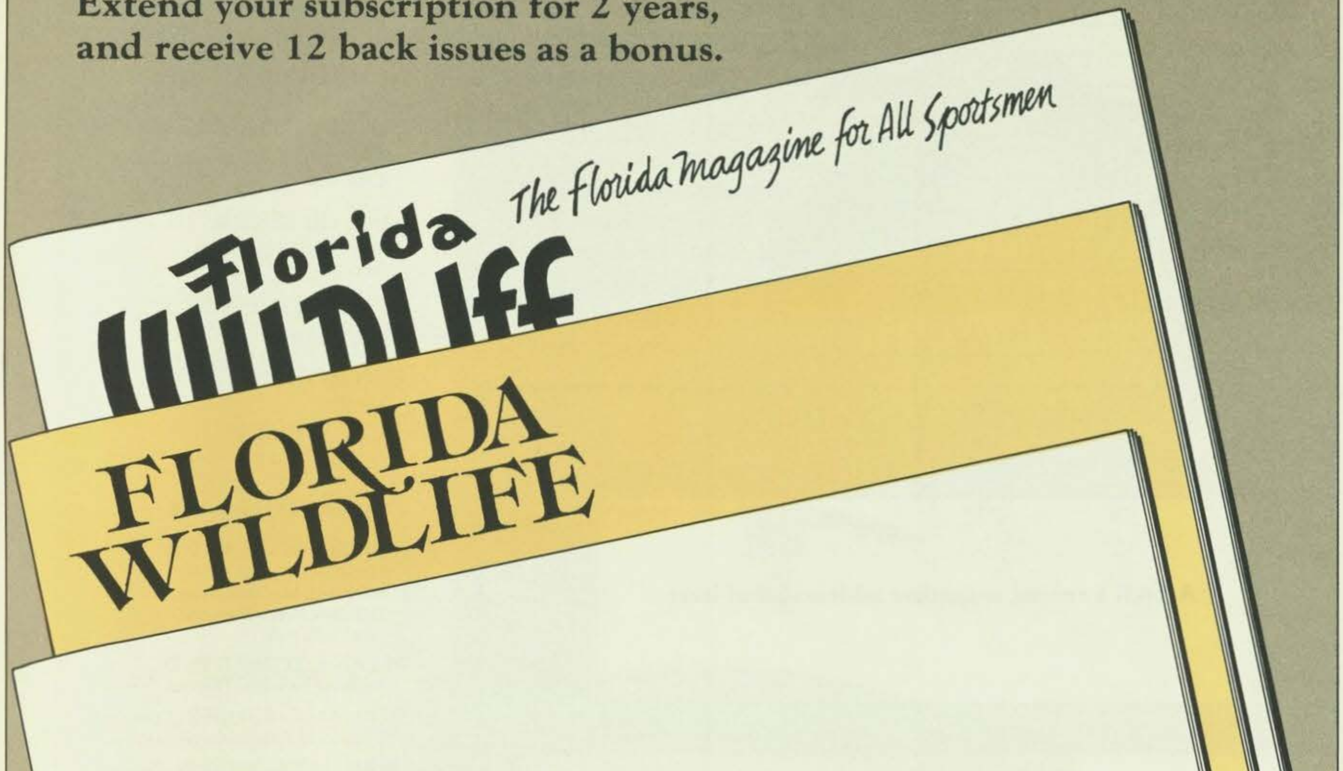
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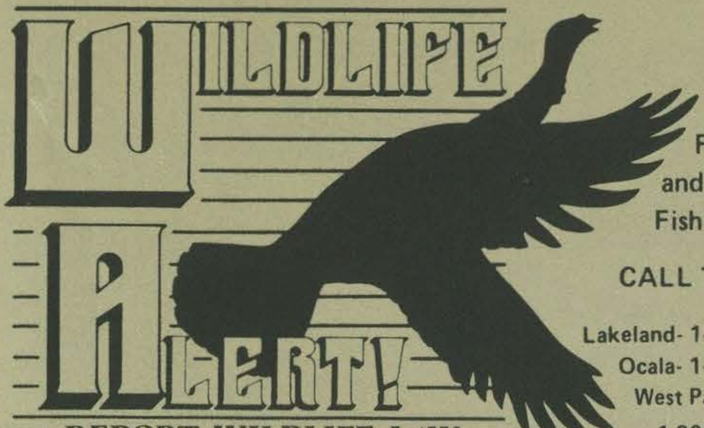

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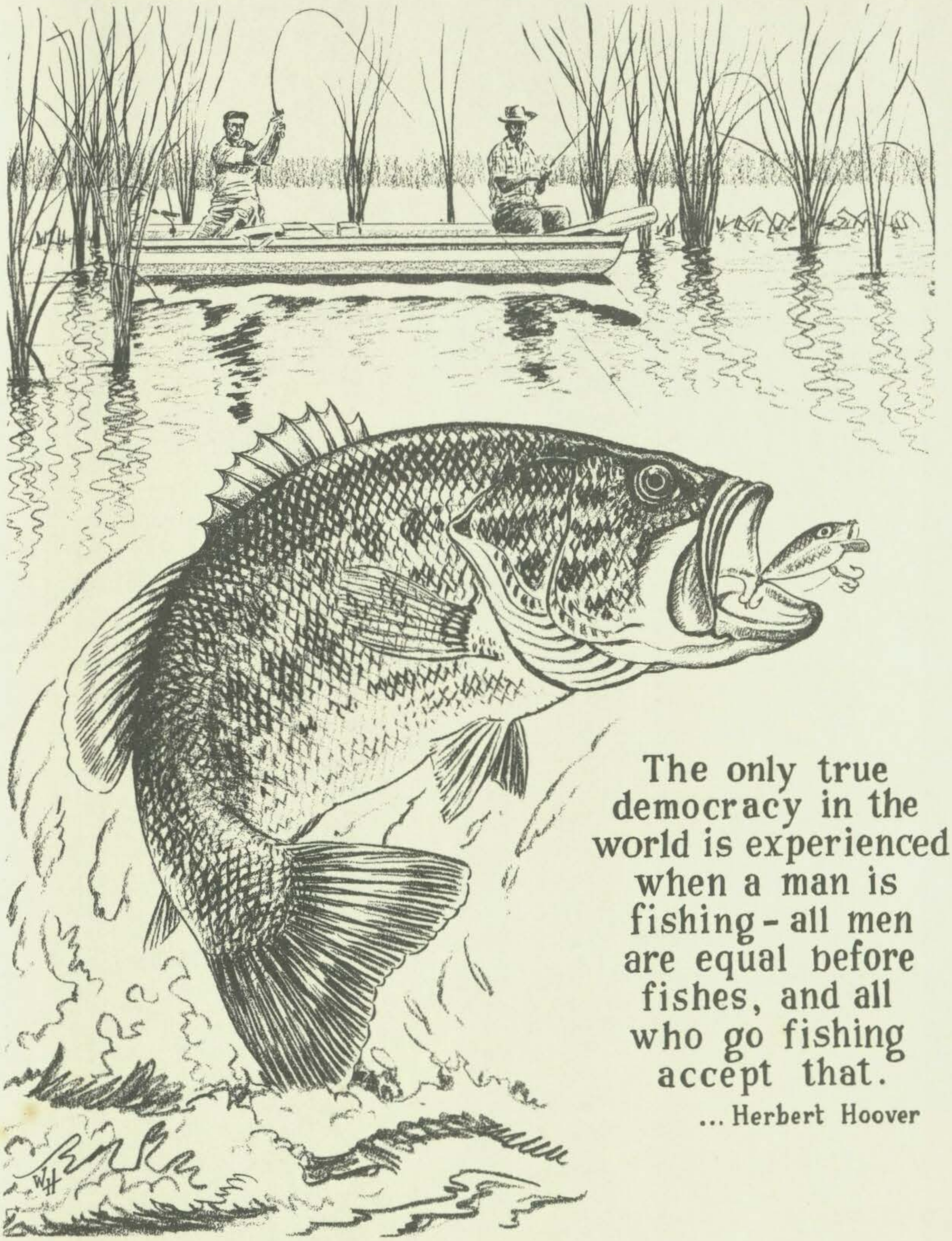

The only true democracy in the world is experienced when a man is fishing - all men are equal before fishes, and all who go fishing accept that.

... Herbert Hoover

Wallace Hughes-Artwork

From the June 1970 Issue of FLORIDA WILDLIFE